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Pulp and Paper Men Meet at Montreal, Que.

Canadian Pulp and Paper Association Holds Most Largely Attended Convention In Its History — R. L. Weldon, President of the Bathurst Power and Paper Company Heads the Association.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 29, 1945—There was an overflowing attendance at the annual meeting of the Canadian Pulp and Paper Association, which concluded here tonight. Over 800 delegates from coast to coast were present, the largest number in the history of the association. Arrangements for the meeting, which was preceded by a two-day meeting of members of the Technical and Woodlands Sections, were under the general direction of A. E. Cadman, secretary-manager of the Association.

Chairman's Address

E. Howard Smith, retiring chairman of the association's executive, giving a brief outline of the work of the association in the past year, announced that the tentative budget for the coming year was approximately $170,000, which included the usual grant of $55,750 to the Pulp and Paper Research Institute of Canada and almost $35,000 for the activities of the Technical and Woodlands Sections. He stated that the institute, a co-operative endeavor of the Dominion Government, McGill University and the association, had continued to function well under its derector-general, Dr. Otto Maass, and that valuable collaboration had been developed with Dr. Clifford B. Purves as chairman of the Department of Industrial and Cellulose Chemistry at McGill.

Speaking earlier at a session of the Woodlands Section, Mr. Smith said that when the war is over Canada will need to make full use of all her resources, material and human, in order to keep her place in the world of trade. "In this respect," he continued, "our forests rank among our greatest natural resources. We have suffered in the past from lack of a sound forest policy. We must put our house in order so that our forest resources are utilized fully, economically and scientifically, and so that we may continue to compete successfully in the world markets and hold our place as Canada's leading manufacturing industry."

Dr. Jahn on Swedish Competition

One of the American guests of the association, Dr. E. C. Jahn, of the New York State College of Forestry, in an address to the members, expressed the belief that Canada could maintain her newsprint markets after the war against any type of world competition. Recently back from a 14-month tour of England, Sweden and Finland as a representative of the United States Department of Agriculture, Dr. Jahn said that Swedish pulp and paper officials were extremely concerned over the great strides made in the industry by Canadian and United States mills, and warned that they were making every effort to meet this increased competition by developing a very high grade product and by laying progressive plans for post-war exports. At present, Dr. Jahn said, very little pulp and paper is being exported by Sweden except in safe conduct ships to neutral countries. Because of the drop in shipments there were great shortages in these materials in all European countries, in Great Britain, and, to a lesser degree, in the United States.

"For at least two years after the war the competition among the nations will not be felt very greatly," he said. "There is at the present time this great shortage of materials that must be filled immediately after the end of hostilities, and which will require the output of all the competing nations. After that period the markets will depend a lot on the price and the quality of the product developed by the producing nations.

"After the war Canada and other countries will have to equal or better Scandinavian quality," said Dr. Jahn, "although at the present time the Canadian product is every bit as good as that produced in Europe."

Six-Point Plan for Forest Management

Aubrey Crabtree, president of the Fraser Companies, Ltd., in an impressive warning on the effects of the exploiting and squandering of Canada's forests which had hitherto prevailed, said Canada was just entering an era in which the forest is receiving its proper consideration as a productive natural resource of major importance in our economic life and, as such, worthy of skillful and careful management. As a six-point plan for a sound forest management, he advocated inventory surveys; forest roads for protection and operating; a more satisfactory system of land tenure; an adequate system of forest protection; increased facilities for specialized training of key personnel; and improvement in living and working conditions for woods labor.

In elaborating on each of these points, he said that fires, insects and diseases were costing the forest industry one-third of the volume of wood cut annually, and said that much remained to be done in respect to these factors in order to make the forest an insurable risk. In respect to roads, he said that Canada's forest motor roads system was far from adequate from the standpoint of operations and protection, adding:

(Continued on page 14)

Wisconsin Paper Group Has Annual Meeting

Fifty-five Executives of Thirty-one Member Mills Hold Conference At Neenah—Kimberly-Clark Donates Ball Park To Public—Discuss Costs In Paper and Pulp Class—Other Late Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., January 29, 1945 — Fifty-five executives of the 31 member mills of the Wisconsin Paper Group attended the annual meeting Saturday, January 20, at the Valley Inn, Neenah, Wis.

Roy H. Purdy, president of the Tuttle Press Company, Appleton, was elected president of the group at the meeting after a luncheon. A. C. Remley, sales manager of the Nekoosa-Edwards Paper Company, Port Edwards, Wis., was elected vice president, succeeding Mr. Purdy.

Leo O. Schubart, secretary-treasurer of the Neenah Paper Company, Neenah, was reelected, as were the following executive committee members: J. D. Young, Edgewater Paper Company, Menasha, Wis.; G. T. Keappock, Nicolet Paper Corporation, De Pere, Wis.; F. C. Heinritz, Appleton Coated Paper Company, Appleton; R. J. Sund, Marathon Corporation, Menasha, Wis.; W. L. Thornton, Jr., Kimberly-Clark Corporation, Neenah, and A. J. Schierl, retiring president who automatically serves for an additional year. C. W. Hoeper, vice president of the Badger Paper Mills, Inc., Peshtigo, Wis., and Henry C. Krueger, planning director, Fox River Paper Corporation, Appleton, were newly elected.

Mr. Schierl, who is secretary and assistant manager of the Whiting-Plover Paper Company, Stevens Point, Wis., presided at the meeting.

New Critical Point Expected

The current paper shortage is expected to reach a new critical point in the next 90 days, A. G. Wakeman, who formerly was with the War Production Board and is now with Kimberly-Clark Corporation, told the group as he emphasized the need for additional cutting of wood for pulp, and the intensified conservation of all waste papers. His talk on "Paper Prospects for 1945 and the Future" stressed the current shortage of pulp supplies as the underlying reason for the current paper shortage.

Secretary-Treasurer Schubart and Irwin Pearson, Menasha, executive secretary, presented reports that indicated that despite drastic wartime regulations, the group has been able to maintain consistently its dated pool schedule throughout 1944, arrangements having been made for the movement of 3,000 pool cars of paper and paper products to 400 cities throughout the United States.

Definite help in the conservation of transportation facilities so vital to the nation's war effort, with pool cars loaded even heavier than in the preceding years, was reported as emphasis was placed on the fact that the organization not only performed a valuable service for the Wisconsin paper industry and paper distributors throughout the nation, but also worked for transportation facilities conservation.

Mr. Pearson was retained as executive secretary. The Wisconsin Paper Group is a non-profit organization for providing schedule pool carload freight delivery service to customers of Wisconsin paper manufacturers and converters, with offices and warehouse at Menasha.

H. G. Boon Elected Vice President

H. G. Boon, Appleton, was elected a vice president of the Kimberly-Clark Corporation, Neenah, Wis., by the directors of the corporation at the monthly meeting January 23 at Neenah.

Mr. Boon has been associated with the corporation since 1914. He has served with the War Production Board in Washington, D. C., for one year, returning to Kimberly-Clark in August, 1944. He is general superintendent.

Touring Clinic Visits Mills

A chest X-ray clinic was conducted last week at the Thilmany Pulp and Paper Company, Kaukauna, Wis. The trailer unit, which recently has served employes of paper mills in other Fox River Valley cities, appeared at the bag mill, at the old construction shop at the lower mill, and at the garage annex at the upper mill.

The service is supplied free by the state board of health to all who wish to avail themselves of an opportunity for a chest checkup.

Safety School Holds Meeting

"Slim" Williams, famous Alaskan wolf dog "musher," was the principal speaker at the second session of the annual safety school Thursday evening, January 25, in the Central school auditorium, Wausau, Wis. Sectional group safety meetings were held before his address.

Gilbert Schreiber, Wausau Paper Mills Company, was chairman of the paper mill safety section, and the speaker was Alfred Baumann, Marathon Corporation.

Discuss Costs in Paper Class

Cost components of pulp and paper manufacture and marketing will be discussed for the class in pulp and paper at 7 o'clock Wednesday evening, February 7, at the Appleton Vocational School. The same course will be offered February 14 at the Menasha Vocational School, Menasha, Wis.

Speakers will be A. C. Haselow, Gilbert Paper Company, Menasha, "Distribution of Actual Costs of Manufacturing"; R. K. Nelson, Kimberly-Clark Corporation, Neenah, "Standard Cost Procedures as Applied to Manufacturing Cost Control"; and C. S. Marty, Kimberly-Clark, "The Cost Component and the Related Statistics as Applied to Marketing and Sales."

Marathon Corp. Publishes Service News

Marathon Corporation has been publishing a quarter-page weekly in the Wausau Record-Herald, Wausau, Wis., entitled "Service News." The entire space is devoted to activities of men and women in the nation's armed services. A number of half column cuts are included. The space is arranged in the form of a tabloid, and the paper's subscribers are requested to clip it for mailing.

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2-OUF-2

Chicago Discusses Future Paper Supply

Government Forecast of Post-War Shortages Deemed Likely As Large Backlog Orders Indicate Heavy Demand — Packaging Experts To Meet — Paper Market Reported Unchanged This Week.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 29, 1945—The paper trade read with interest recent official reports that shortages in paper would continue for at least a year after the conclusion of the war. These official reports coincide with private estimates here which show that the heavy backlogs of consumer demand are in themselves enough to assure appreciable shortages for a long time to come. Local military authorities are also credited here with pointing out the fact that after hostilities the requirements for "military papers" will be pronounced both to maintain the military needed for "cleaning up" procedure and to handle the gigantic demobilization problem.

Of major interest to the trade is the increasing emphasis of the Office of Price Administration on absorptions of profit. Had not the paper industry in general run at maximum production speed during the year, and had not distributors operated on a maximum volume basis, present OPA arrangements would have been impossible because of the great increase in costs for both labor and materials. It is the general feeling that should actual production lessen perceptibly the trade would be in no position to do other than operate at a loss. At the same time, production would suffer severely if OPA and WPB contrived to develop a "squeeze" that would dry up production through a lack of incentive either to produce or sell.

Markets here made no change during the week. Waste papers continue critical though Chicago area collections were supposed to be about as good as any in the country.

Packaging Expects to Meet

The Industrial Packaging Engineers Association of America, perhaps the newest organization in the paper and allied trades, will hold its first big meeting next Monday, January 29, at the Stevens Hotel. About 200 members are expected to be present at the sessions which were considered of enough importance to the War effort to warrant their being held even though they still come within the convention restriction limit of February 1. The association, formed to develop better methods for packing industrial plants and to concentrate and crystallize present experiences for more effective post-war operations, will provide speakers dealing with present packing problems and the possibility of improving appearance, construction and performance of packaging materials after the war is over. R. F. Weber, supervisor of packing and loading for the International Harvester Company, is president of the Association and M. H. Allen of the Dodge Chicago organization is vice president. Though not so old, the organization has already made important progress in interesting a wide variety of firms in the need for developing better methods for packing industrial products.

Observe Franklin's Birthday

Many a paper executive was present at the Old Time Printers Association's 60th annual banquet held last week to commemorate the birthday of Benjamin Franklin. Speakers at the banquet included L. E. Goddard, president and F. J. Hagen and Gradie Oakes, both past presidents of the Chicago Club of Printing House Craftsmen which joined with the old time printers in observing printing education week.

Container Outlook Good

The Container Corporation of America was reported in financial circles this week to have overcome difficulties resulting from a tight pulp situation during the last year and there are estimates of dollar sales reaching $70,000,000 as compared to $63,000,000 in 1943. The increase, it is reported, would have been more pronounced had sifficient material and manpower been available. While taxes were expected to absorb the major portion of the increase in operating income, earnings, it was reported, may make a favorable comparison with 1943. It is expected that there will be a decline in sales after the war but it is expected that inasmuch as there is very little ahead in the way of a reconversion problem, the corporation can effect a quick access to post-war markets expected to be prodigious in quantity.

Prairie State Co. Expands

The Prairie State Paper Company of Chicago is reported to have purchased from the Philip Carey Company of Lockland, Ohio, a plant in Middletown, Ohio, which was formerly operated by the Wardlow-Thomas Paper Company. No further details of the acquisition were announced.

To Attend Annual Sales Meeting

Chicago representatives of the Nekoosa-Edwards Paper Company, will go to Port Edwards next week to attend the annual sales conference to be held this year for the twelfth consecutive time. The dates are January 29 to 31. Discussions are expected to cover the Nepco program for 1945-46, quality limitations, market potentials and other matters. A summary of the situation in this area will be made by R. E. Frisby and C. J. Brown of the Chicago office.

Announce New Eastco Distributors

The Eastern Corporation of Bangor, Maine, has recently announced the appointment of the Reliable Paper Company, Chicago, as distributor for all lines of Eastco fine papers. The Reliable organization is a comparatively new though rapidly growing organization operated by two men with wide experience in the industry. One of the partners, M. H. Motschman, was with the Dartnell Corporation for 16 years, serving as purchasing agent, plant printing superintendent and advertising manager. The other, C. C. Wene, who handled the merchandising and sales end of the company, was formerly with the James White Paper Company, acting as salesman for over ten years. He is also well acquainted with the envelope industry here. Offices of the company are at 1514 No. Wells street with additional warehouse space at 215 W. Institute Place. The firm began operations early last Fall.

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Discusses Army's Paper Needs For 1945

At the weekly Monday luncheon of the Salesmen's Association of the Paper Industry, held at the "400" Restaurant, New York on January 29, the guest speaker was Maj. Robert B. Hamilton, Procurement Division, Office of the Quartermaster General, Washington, D. C.

Major Hamilton spoke on the Army's paper procurement plan for 1945 as follows:

Throughout the past year, efforts have been made to centralize the entire procurement of paper at Jersey City QM Depot. The program there has expanded to such an extent that the estimated direct tonnage purchased by the Quartermaster Corps approximates 700,000 tons a year.

It would take too long to break down the figures for you grade by grade. However, the projected Army program for this year, as it appears at this moment, will not be less than purchased in 1944 and it may be considerably more in specific grades.

The quantity of specific items such as cut size mimeograph, bond, manifold, etc. has been approximately the same for some time. The first item has for several years, amounted to 50 - 60 thousand tons; bond 15 - 20 tons, etc. These grades have always been a problem because of the finishing involved, which has taxed your finishing rooms pretty heavily. As the situation now stands—no relief is in sight for any easing of your finishing room load. Other grades remain firm in demand such as toilet tissue, kraft, blue print, etc.

In still other grades such as waterproof paper, the Army's requirements have crept up from a negligible quantity in 1941 to a quantity which currently demands approximately 26% of that industry's entire production. The subsistence packaging program also takes huge quantities of Kraft for cartons and inner packages. This program obviously will continue until V-E and V-J day and to a lesser extent, after those happy days arrive.

I am sure you will understand that I can only sketch briefly our requirement picture. To sum it up —as conditions now stand, the Army's requirements will not be reduced this year. On some items there will be even greater demands than in the past.

Plan To Use New Contract

Most of you are familiar with the old open-end contract system of covering certain Army paper requirements. This type of contract had certain defects such as lack of certainty as to whether the contracts would be called in their entirety and if so when such calls would be made. This often prohibited the mills from ordering their packaging materials sufficiently far in advance to correspond to the requirements of the box industry. Last fall you were introduced to the partially guaranteed type of contract which covered you for one month's packaging materials and was intended to give you adequate time in which to secure your cartons and other packaging materials. Unfortunately some mills did not take advantage of the contract provisions and failed to order their cartons as provided for in the contract. Also some items were small and one month's supply of cartons did not make a run for the box maker. To eliminate these deficiencies the Quartermaster Corps is now contemplating the issuance of firm contracts which will probably operate as follows.

(1) Bids will be issued sufficiently far enough in advance so as to enable the procuring depot to complete the negotiation details, issue the formal contract, and allow you 60 days' time before the first month's manufacturing time to allow you to order your packing materials and other items you need to fulfill the contract.

(2) All paper bought in this manner will be FOB mill inasmuch as it is impossible to forecast requirements by destination so far in advance.

It is hoped to be able to supply you 70% of the monthly distribution by the 25th of a month such as the 25th of May for shipment in July. The balance of the allotment will be used for emergency purposes. This distribution, amounting to 30% should be furnished you by the 15th day of the month preceding the month in which shipment is required. This form of contracting, in addition to being advantageous to you in enabling you to place your orders for supplies far enough in advance to insure delivery by the time required, will also enable you to report your take of tonnage to the WPB so that you will be credited against the withholding clause in Restriction Order M-241. Converters should be able to place their orders for paper well in advance and again your reports to WPB can include this tonnage.

I want to stop here and point out that this system of contracting will not place all Army requirements on this type of contract. The goal set for such coverage is 40 to 50% of the requirements. There will still be spot orders for various types of paper and emergency shipments will still be required. However, since the type of papers which will be under contract are made up largely of cut sizes and converted items, it should relieve your situation greatly because your finishing rooms can be scheduled quite far in advance.

In order to operate successfully under this program, the Army will need your cooperation.

(1) Every mill who can possibly do so, should participate in the program. It is desired to spread the load as thinly as possible to include in the program, a share of all the finishing room equipment available.

(2) When a mill receives a contract or spot order, the contract or order should be read carefully and all instructions complied with as quickly as possible.

(3) Place your orders for the supplies needed to supply your needs in fufilling your contract with your suppliers at the earliest possible moment after you have analyzed your contract. This is most important because of the extreme shortage of the paper and lumber which go to make up your packing supplies.

Be sure to schedule your production runs sufficiently in advance so as to insure deliveries on time. The problem of delinquencies has proven even more difficult to solve in the past than has the actual procurement of the material. I cannot stress too emphatically how important this detail is. Good supply planning is worthless if the shipment promises given on contracts and purchase orders are not adhered to. In the event circumstances beyond your control prevent you from shipping as planned, you should inform the procuring depot immediately. If the depot has such notice it can make adjustments to meet the situation but if they are not so notified, some one will be left without needed supplies.

If you gentlemen will stress these points to your operating people, it will assist the Army more than I can tell you.

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PULP AND PAPER MEN MEET AT MONTREAL

(Continued from page 7)

"We must have adequate roads for harvesting more distant areas for the cutting of forests and for the obtaining of labor in competition with others. There appears to be a difference of opinion as to whether these roads should be built by the state or industry. It is my belief that industry would build these roads more economically and in more suitable locations than the government."

The "Bits and Pieces" Program

G. K. Sheils, Deputy Minister of Munitions and Supply, was a guest at the meeting, and to him was handed a check for $175,000 on behalf of the Wartime Machine Shop Board of the Association, the presentation being made by Frederick L. Allen, one of the members of the board.

The amount of the check represented the surplus left over from the operational expense of the Wartime Machine Shop Board since its inception in the winter of 1941, when it was formed to help the government provide "bits and pieces" of war equipment to large war plants, thus removing bottlenecks. Coordination of the work of the board needed financing, so it was agreed that the board should charge the government a small fee on each item of war material produced in the shops. Since the board was a non-profit organization, it was understood that any surplus left over from its operational expense would be returned. As a result of efficient minimum-cost operations, the Board had shown a surplus and was in a position to return the extra money to the government.

In accepting the cheque, Mr. Shiels pointed out that it represented the 24 hour day war work carried out in the 83 machine shops operating under the Board "with results which, to say the least, have been noteworthy." He added that the shops of the pulp and paper industry operating under the board, had turned out more than $10,000,000 worth of war material.

Other Special Features

There were two other special features of the meeting. With eight members of the Royal Canadian Sea Cadets standing guard, A. E. Cadman, the secretary-manager, asked that delegates make contributions for comforts for the merchant navy—an invitation that had a hearty response. The other was the presence of the first woman delegate to the Association's annual meetings. She was the 23-year-old Claire Jones, of Toronto, whose fiance is an officer in the Canadian Navy. She is at present engaged as a chemical engineer in the laboratories of the Anglo-Canadian Northeastern Paper Products Company at Quebec City. Her fiance is also a chemical engineer.

American Guest Speakers

Among the Americans who attended and contributed to the many interesting and informative addresses and discussions on technical aspects of the industry at the meetings of the Technical and Woodlands Sections were, in addition to Dr. Jahn, already mentioned, H. A. DuBois, Kimberly-Clark Corporation, who spoke on "The Future of the Sulphite Industry in Canada and the United States"; O. E. S. Hedbring, Ohio Boxboard Company, on "Suction Equipment for High Speed Cylinder Machines"; G. E. Fromm, American Cyanamid and Chemical Corporation, on "Melamine Resins in the Development of Wet and Dry Strengths of Paper"; J. P. Grant, the *Philadelphia Bulletin*, on "A Mechanical Superintendent Looks at Newsprint"; Marinus Westveld, United States Forest Service, on "Problems of Spruce Regeneration"; K. S. Trowbridge, American Pulpwood Association, on "New Developments in Pulpwood Logging in the United States; and Professor D. M. Matthews, University of Michigan, on "Planning of Logging Operations."

Election of Officers

R. L. Weldon, of Montreal, president of the Bathurst Power and Paper Company, was elected chairman of the Executive Board of the Association for the ensuing year, in succession to E. Howard Smith. C. R. Whitehead, also of Montreal, was elected senior vice-president. Named to the Executive Board for 1945 were: George Barber, Toronto, Spruce Falls Power and Paper Company; G. L. Carruthers, Toronto, Interlake Tissue Mills, Limited; W. S. Kidd, Hull, E. B. Eddy Company; E. M. Little, Quebec, Anglo-Canadian Pulp and Paper Mills; F. G. Robinson, Montreal, Canadian International Paper Company; and J. A. Young, Vancouver, Pacific Mills.

Woodlands Section Council: B. F. Avery, of the Great Lakes Paper Co., Ltd., Fort William, Ont., succeeded J. V. Perrin, of Brown Corporation, Quebec, P. Q., as chairman for 1945. Maj-Gen. Howard Kennedy, of Quebec North Shore Paper Co., Montreal, was elected vice-president, succeeding W. G. Wright, of Price Brothers and Co. Ltd., Quebec City.

The two new councillors elected were V. F. Johnson, of Canadian International Paper Co., Montreal, and M. R. Kane, of Price Brother and Co. Ltd., Quebec. Other officers reelected were A. W. DeLand, of Powell River Co., Ltd., Vancouver, B. C.; F. Faure, of Consolidated Paper Corp., Ltd., Montreal; Gordon Godwin, of Quebec North Shore Paper Co., Ltd., Montreal; J. B. Matthews, of Provincial Paper Ltd., Port Arthur, Ont.; R. G. MacFarlane, of Fraser Companies, Ltd., Edmundston, N. B.; and C. B. Davis, of Abitibi Power and Paper Co. Ltd., Toronto.

Technical Section Council: Dr. A. C. Hill, director of research, Anglo-Canadian Pulp and Paper Mills, Ltd., and Associated Companies, was elected chairman. He succeeds G. E. Shipman, of Donnacona Paper Co., Donnacona, Que., who has been chairman for the past six years and has seen much of the war effect on the industry. Three members were elected to the technical council for a period of three years. They were R. J. Askin, manager of mills, Abitibi Power and Paper Co. Ltd.; Carl D. Jentz, sulphite superintendent, St. Lawrence Paper Mills Co. Ltd.; and A. J. Philip, resident manager of Canada Paper Co.

Valparaiso Plant To Expand

Valparaiso, Ind., January 29, 1945—An addition to the Valparaiso plant of the Continental Diamond Fiber Company plant involving overall expenditures of $250,000 for building and machines, will be started soon, according to L. L. Howard, general manager. A new brick and concrete structure 287 by 50 feet will be built. When the new building unit is completed and put in operation, it will enable the local company to double its output. Additional help will be employed.

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Obituary

Major M. H. Doig

Major Mitchell Hartt Doig, office manager of the Ontario Paper Company and veteran of the last war, has died suddenly at his home in Westmount, P. Q., in his 52nd year.

Born in Montreal, Major Doig was educated in local schools and went overseas in 1915 with the 24th Battalion as a private. Later he was commissioned and awarded the Military Cross. He had been with his present firm since 1922. During the first two years of the present war, Major Doig acted as instructor in the McGill C.O.T.C.

Besides his wife, formerly Margaret Fotheringham, he leaves two daughters, Heather and Susan; a son, Ian; his mother, Mrs. Jane McKay Doig, two brothers, Frederick W., of Woodstock, Ont., and Capt. Kenneth J., of Montreal, and a sister, Mrs. E. D. Alexander, of Vancouver, B. C.

William Glasson

William Glasson at one time treasurer of the W. H. Parsons Paper Company, New York, died January 4, at Montclair, N. J., in his eighty-first year. Mr. Glasson was born in Cornwall, England, in 1864 and came to the United States in 1887. About twenty-five years ago he retired from the W. H. Parsons Paper Company of 111 Broadway, New York, of which he was the treasurer.

He has been a resident of Montclair, N. J. for more than twenty years. He is survived by his wife, Mary T. Glasson, three daughters; Mrs. Frank D. Drake of Verona, N. J., Mrs. Gladys Glasson Areson and Mrs. Theodore C. Nevins of Montclair, four grandchildren and two great grandchildren.

Harry S. Whitney

Harry S. Whitney, who with his brother Edward, founded the Whitney Manufacturing Company, Worcester, Mass., a stationery manufacturing concern, in 1900, retiring two years ago, died January 24 in the Hahnemann Hospital.

Born in Worcester, he was graduated from Worcester Polytechnic Institute in 1884. He was a member of the Wachusett Mountain State Reservation Commission, a director of the Holden District Hospital and a member of the Worcester Economic Club.

Hercules Revises Territories

The establishment of Hercules Powder Company's Cellulose Products Department Chicago office as a regular branch office, and a revision of territories assigned to the sales and technical service personnel of the department has been announced by J. B. Wiesel, director of sales and development for the Cellulose Products Department.

Fred K. Shankweiler, of the department's New York office, will be manager of the Chicago branch office, Cellulose Products Department. Clarence Gault, former Chicago representative for the Cellulose Products Department, has been transferred to a Herculese-operated ordnance plant, because of the critical need for technical men at that plant.

The Chicago territory will include the states of Minnesota, Wisconsin, Illinois, Indiana, Kentucky, and Missouri.

Orders Mills To Use Less Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 29, 1945—The War Production Board's Forest Products Bureau has notified every paper and paper board mill to curtail its use of market wood pulp during the first quarter of 1945 by 5% below the consumption originally authorized, the WPB Pulp Allocation Office announced today. This is Amendment No. 6 to MPR No. 451, Book Paper, effective January 31, 1945.

The continuing shortage of market wood pulp, WPB said, made it probable that most mills would in any event suffer an involuntary curtailment of at least this amount through failure of sufficient deliveries to arrive on time. It was felt, WPB officials said, that a uniform reduction was the most equitable means of meeting this situation.

The reduction applies only to market wood pulp, it was emphasized, and direct military programs have been safeguarded. As integrated operations are not affected, beyond existing withholding provisions, the net effect on the over-all paper and paper board program for the first quarter will be inconsequential, WPB said. The 5% saving of market pulp consumption will, however, permit the industry to enter the second quarter with a slightly more favorable inventory position and thus cushion whatever adjustments may be unavoidable in the pulp, paper and paper board program for that period.

Waterproof Paper Group Meets

At the annual meeting of the Waterproof Paper Group, held at the Biltmore Hotel in New York on January 15 and 16, James F. Doyle, vice-president of the Arkell Safety Bag Company, New York, N. Y., was elected chairman, with Fred P. Wood, president of the Simplex Paper Corporation, Adrian, Mich., reelected vice-chairman. Other officers elected were as follows: Arthur M. Anderson, the Sisalkraft Company, treasurer; F. E. Donovan, Specialty Converters, Inc.; J. D. Griffin, Scutan Division, Union Bag and Paper Corporation; W. W. Rowe, Cincinnati Industries, Inc.; J. D. Young, Edgewater Paper Company; W. G. Cowan, The Ruberoid Company; G. E. McCorison, Thilmany Pulp and Paper Company.

Philip O. Deitsch, managing director of the group, who has served this association since its inception, was again re-designated managing director of the group for the fourth consecutive year.

The meeting was attended by more than 70 odd individuals representing some 31 units of production in the field.

In his annual report to the Industry, the retiring Chairman, J. D. Griffin of the Scutan Division of the Union Bag and Paper Corporation, commended the accomplishments of the group in its war work up to date, and made a strong plea toward continued cooperation, not only in a furtherance of the Industry's war effort, but as well when peace returns.

Lt. Surridge Killed in Action

William G. Surridge, who recently became connected with C. F. Crehore & Sons, Inc. of Newton Lower Falls, Mass. as superintendent of their paperboard mill, has just received word that his son was killed in action on the Western Front on January 9. He was first lieutenant in a tank battalion and had been in the army four years.

Soda Pulp Higher

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 29, 1945—An increase of $4 per ton in the manufacturers' ceiling price of bleached and unbleached soda wood pulp was announced by the Office of Price Administration today.

This action, effective January 30, 1945, lifts the manufacturer's ceiling for bleached soda wood pulp to $76 per short air dry ton and that of unbleached soda wood pulp to $72. With few exceptions, prices of paper produced by the buyers of soda pulp will remain unchanged, OPA said, because these buyers are expected to be able to pay the increased price without requiring higher ceilings for their own products.

All soda wood pulp produced and sold in the United States, or imported into the United States, will be governed by the new ceilings. Lend-lease and export prices are increased by the same amount.

Soda pulp, used in the manufacture of many kinds of paper, accounts for less than 2.50% of the total fiber materials used in the fabrication of these papers. However, since the outbreak of the war, soda pulp, normally used in the manufacture of book paper and blotting paper, has been in greater demand for the production of other essential and more diversified paper products. In some cases, soda pulp is being used as a partial substitute for more critical fiber.

Today's price action will result in a reduction of the subsidy payments that have been made to domestic producers of soda pulp by the Defense Supplies Corporation since January 1944. Heretofore, 90% of the total domestic sales of soda pulp was eligible for subsidy. Savings to buyers resulting from such payments, OPA said, were not sufficient to justify the subsidization of such a large percentage of the total tonnage sold. The price action today will reduce the tonnage of soda pulp subsidized to 60% of the total.

Book Papers Increased

WASHINGTON, D. C., January 29, 1945—Ceiling prices for the process of applying secondary finishing to lightweight book papers were increased by the Office of Price Administration today.

These increases, effective January 31, 1945, are 50 cents a hundred pounds when the secondary finishing is applied to book papers weighing from 40 to 54 pounds inclusive per 500 sheets 25 by 38 inches, and $1 a hundred pounds when the finishing is applied to book papers weighing below 40 pounds per 500 sheets of the same size.

The increases can be added to the existing differentials for applying secondary finishing to normal weight book papers. These differentials, which heretofore have been each manufacturer's prices in the base period, were spelled out in uniform dollar-and-cent amounts applicable to the whole industry. They range from $1.50 to $2.50 per hundredweight, depending on the type of secondary finishing and the volume of papers being finished.

Only a small percentage of book papers is given secondary finishing, OPA pointed out. Since June 1944, book papers customarily given secondary finishing have been produced only in lightweights under a War Production Board ruling. Today's increases are to compensate manufacturers for the extra cost involved in secondary finishing only lightweight papers. The action is part of OPA's general program of cooperation with the War Production Board's program for reduction of the basis weights of paper in the interest of fiber conservation.

Today's added differentials may be passed on by wholesalers to printers, the chief buyers of secondary finished book papers, who, in turn, use these papers for making up various kinds of printed products, some of which are exempt from price control. OPA said that, on the average, the cost to consumers for items made from secondary finished lightweight book papers would be no more than for the same items made previously from normal weight secondary finished papers. No secondary finished book papers as such are sold at retail.

Forest Fire Placards

Four two-color window cards, stressing in cartoon style the importance of forest fire prevention, have been designed by the American Forest Products Industries, Inc., and may be obtained in quantity, without cost, for distribution by forest industries, state and school agencies or other organizations undertaking fire prevention campaigns.

Each design features the forest character "Woody," who has a brief, striking message stressing personal responsibility in prevention of forest fires.

Full information may be obtained by writing to American Forest Products Industries, Inc., 1319 18th street, N. W., Washington 6, D. C.

V-Belt Drive Catalog

An unusually complete V-belt drive catalog — with all of the required information to make correct drive selections reduced to handy charts, tables and drawings—has just been released by the Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin.

Newest V-belt drive product covered in this Texrope drive engineering summary is the Company's new "Magic-Grip" sheave, designed for fast, easy mounting and dismounting. A quick-picture story of the sheave and complete facts for applying are offered.

Another section covers the Texrope "Econograph" method of drive selections, now widely used where drive designing is frequently necessary. Most important considerations in the design of any V-belt drive—driving sheave diameter and belt size—are readily arrived at with the aid of the Econograph.

List prices, stock sizes, dimensions, and construction details are included for all Texrope drives. Additional descriptions cover the application of Texrope Vari-pitch sheaves and drives and the Vari-pitch speed-changer.

The new catalog, B6051E, may be obtained from the Allis-Chalmers Manufacturing Company, Milwaukee 1, Wis.

Whiting Pension Plan

December 29 was a red letter day at the Whiting plant, at Harvey, Ill., when 457 employees received their passbooks under the recently adopted Whiting pension plan. Entered in the passbooks were the amounts credited to each individual for the first two years covered by the plan.

The purpose is to provide for retirement at age 65, or sooner under certain conditions, and to render aid in case of disability or illness. Employees become eligible for participation in the Pension Trust after completing five years of employment. The extent of their participation is determined in part by length of service, in part by annual earnings.

Funds for the Pension Trust are provided by the company (employees do not contribute at all) and funds once contributed to the Trust cannot be diverted to other uses. The Trust is administered by three trustees, two from management and one to represent the employees.

At present the trustees are: Stevens H. Hammond, R. A. Pascoe and Otto Schumann.

The plan has been approved by the Government.

Why Send Newsprint To France?

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 31, 1945—Representatives Lyle H. Boren and Clarence J. Brown have sent the following communication to the Secretary of State relative to the newsprint situation.

Ever since the Special Subcommittee on Investigation of Restrictions on Brand Names and Newsprint was formed under the Committee on Interstate and Foreign Commerce, we have been much concerned with the manner and effect of pulp and paper controls on the press of this country. In the January 24 issue of the *Washington Times-Herald* we read that France had just been allocated 5,000 tons of U. S. newsprint to be shipped within the month. This news item points to a much broader problem which we wish to outline for your attention.

Why should France appeal to us—three thousand miles away—for pulp and paper when the world's greatest glut of pulp and paper capacity is right next door, in Sweden, Finland and Russia?

In the current report on "The World's Paper and Wood Pulp Industry Before and After V-E Day," just issued by the Department of Commerce, Industrial Series No. 14, it states that Sweden has "600,000 tons of wood pulp now in storage." A recent cable to the *New York Times* from Stockholm stated that Russia would receive $23,000,000 worth of forest products from Finland during 1945 as a part of her reparation obligations. But in addition to this, Finland will have some 300,000 tons of paper and 500,000 tons of other cellulose with a total value of $45,000,000 available for export to other parts of the world. It also states that by the end of this year 95% of Finnish wood pulp and cellulose plants will be back in full production. Russia's own vast wood resources need not be enumerated here. Thus Russia, Finland and Sweden, whose resources are right now accessible to each other, have together great surpluses of pulpwood, pulp and paper so badly needed by Great Britain, Holland, Belgium, France and Italy.

Russia should be able to ship out of Archangel and Petsamo to the north and from the Black Sea into the Mediterranean to the south and satisfy these European demands. Furthermore, such shipments need not be consigned to ocean going cargo vessels that are so desperately needed by our fighting men, because these shipments can be carried in smaller type coast-wise vessels which would be normal to this trade. This would seem to be right in line with the emphasis being placed by our military leaders on the necessity of relieving shipping facilities to and from the United States of every ton of cargo not directly associated with the prosecution of the war.

The fact that paper requirements are put so high on the priority list by the French is of peculiar interest, since in the years just prior to the war France was becoming more and more self-sufficient in meeting her own paper requirements by expanding her pulp and paper industry. The victory of American armies in France was so sudden and so complete that the German headlong retreat left them practically no time to destroy French manufacturing facilities. It is our understanding, therefore, that French pulp and paper producing facilities are more or less intact. It is also interesting that in the face of their great paper shortage, the French government seems to have so little effective control over the distribution and use of paper in spite of the fact that France is at war and under such circumstances it is considered normal for a democratic government to take a strong position in the management of material shortages.

In conclusion, we refer again to the Department of Commerce World Pulp and Paper study where it says, "estimates for the U. S. show a net deficit of almost 4,000,000 tons of paper the *first year after* victory in Europe." So, to repeat, why should we take paper from our critically short supply and ship it three thousand miles in ocean freighters that are in critically short supply in order to satisfy a demand which could be met by a pulp and paper glut that is virtually next door? As the battlefronts now stand, Russia is the key to this problem and we respectively suggest that you bring this situation to the attention of the Russian Government.

Indianapolis More Optimistic

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 29, 1945—While the paper situation in central Indiana remained dark during the past week, the trade merely is tightening its belt and doing the best possible under the circumstances. With tremendous gains by the Russians, there is a renewed feeling of optimism locally that the war in Europe will be over, insofar as active fighting is concerned, before the end of the summer. If this is possible, there should be some relief in the paper shortage during the last quarter of the year. The local trade is not expecting any improvement in supplies until that time at least. In the meantime, every effort is being made to salvage all paper and rags possible, most of the local salvaging going to the Indiana mills. A big paper drive is scheduled here beginning February 5 and continuing until February 8. City owned trucks will collect the paper. Other larger cities of the state also plan paper collections on a wholesale scale for the coming month.

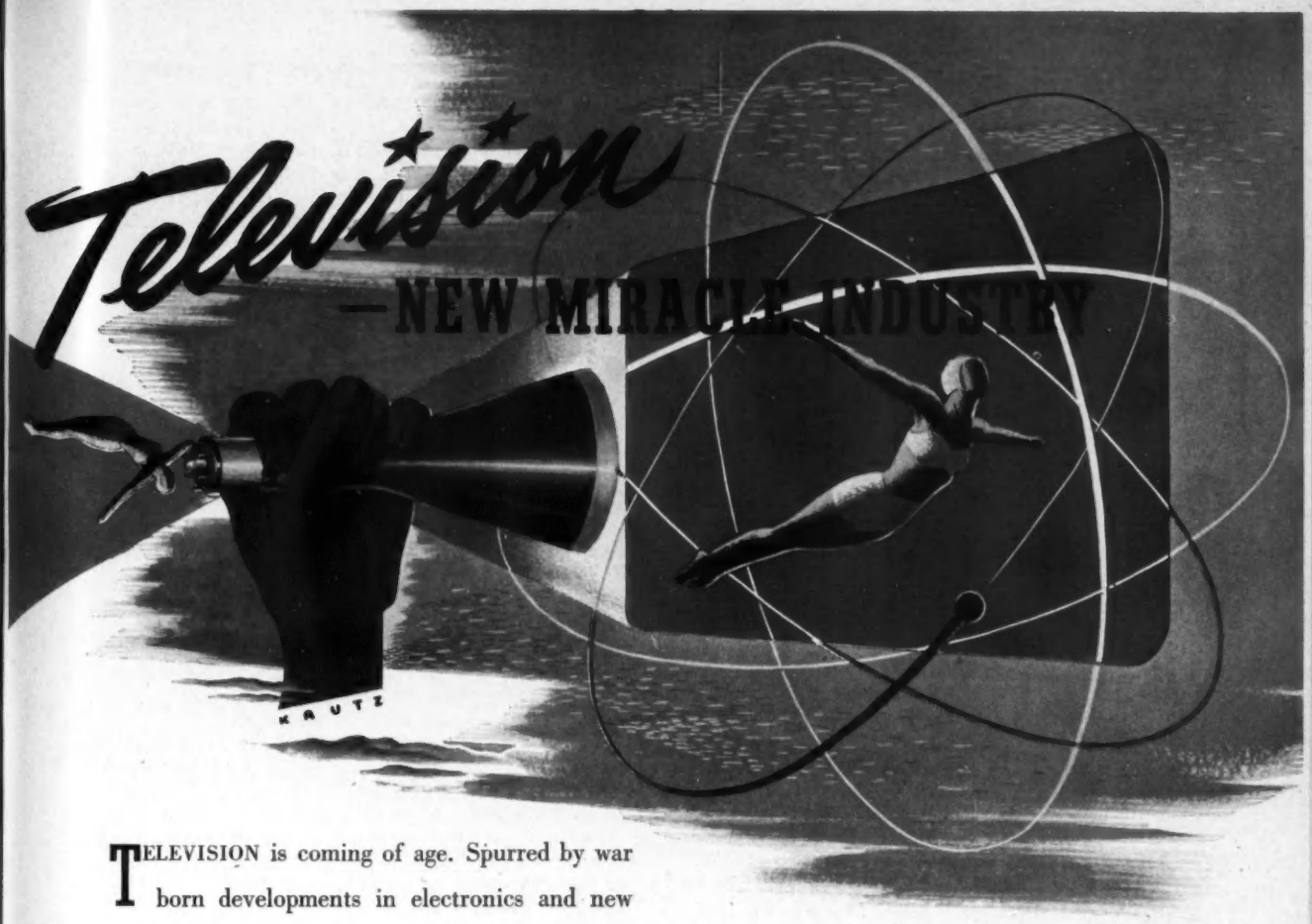
Civilian demand continued heavy last week, with supplies strictly limited and many orders not filled. Demand for all sorts of paper and paper products continued heavy from the military and defense plants. These, of course have heavy priorities and are having little difficulty in securing their requirements.

Paper container demand continued good with the local factories producing to the limit of their ability. Bag demand was heavy also with some orders only partly filled. Most jobbers of wrapping paper and bags say if the public would cooperate wholeheartedly in the conservation of wrapping paper and bags, there would be little actual shortage in the local territory.

Mill demand for waste paper continued to exceed the supply. Prices on all grades of paper stock were at ceiling prices. An active demand also was reported last week for rags, with new cotton cuttings particularly active. Prices showed no change.

Presents Ball Park to Public

Kimberly-Clark Corporation, which has a mill at Kimberly, Wis., has presented a ball park to the public school. The board of education recently accepted the gift. For three years the school board had set aside funds, now totaling $5,500, to buy and develop an athletic field. The corporation's gift has made it possible to use this fund entirely for developing the park. Besides high school athletics, the park will be used for all community athletics and recreational programs. Modern lighting equipment will be installed.



TELEVISION is coming of age. Spurred by war born developments in electronics and new technical refinements, the miracle of images broadcast through the ether is now emerging as a new and unique medium of communication and expression. It promises some day to be as commonplace as the radio and the printed page.

Behind this new miracle industry lie many decades of research and technical achievement. Its beginnings go far back into the genesis of radio itself and the first projection of sound waves. For the principles upon which television is based are formulated upon the work of pioneer scientists who first discovered the physical nature of sound and light. Thus, to those who labored long ago, as well as to the modern technicians who gave television concrete reality, we owe a debt for creating the "Margin of Experience" for the final achievement.

In every field of science, commerce or industry, this "Margin of Experience" proves again and again to be a factor vital to success. Niagara offers it in the field of electro-chemical products. For Niagara has pioneered constantly in the development, improvement and adaptation to new uses of Liquid Chlorine, Caustic Soda, Caustic Potash, Paradichlorobenzene and Carbonate of Potash. Rely on Niagara's "Margin of Experience" for greater success in the use of these products.

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CAUSTIC POTASH • CAUSTIC SODA • PARADICHLOROBENZENE
CARBONATE OF POTASH • LIQUID CHLORINE

ADVENTURES IN THE "MARGIN OF EXPERIENCE"

Sherman Makes Four Appointments

Four new appointments have been announced in the executive sales staff of Sherman Paper Products Corporation of Newton Upper Falls, Mass.

George H. Stucke has been advanced to general sales manager. He will continue in his duties as sales manager of the Industrial Division, assisted by J. Arthur Hardigan, who has been promoted to the position of sales manager of the Display Division, and P. E. Sheehan, sales manager of the Specialties Division.

Mr. Stucke has had an active war-time role in the expansion of an engineering service to aid war plants in their packaging problems. During this period, he helped to develop the many Sherman greaseproof, noncorrosive papers which are widely used by industry and the armed forces in protecting metal products against corrosion.

Jules E. Timer, formerly regional packaging engineer for the New York and Central Atlantic area, has been advanced to the post of Eastern sales manager with headquarters in New York City.

Allyn G. Whitehead, formerly regional packaging engineer in the Michigan area, has been appointed Western sales manager with headquarters in Chicago.

Air Force to Spray Forests

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 29, 1945—At a recent conference of Canadian and United States scientists, called by Hon. W. G. Thompson, minister of lands and forests, for Ontario, it was announced that Royal Canadian Air Force planes and crews will be made available this year for spraying Canadian forests with D.D.T. insecticide against the budworm which is depleting large areas of Ontario forests. Some spraying from aeroplanes was done last year with what is understood to have been good results.

In the meantime, other experimental work will be continued with the budworm, which has seriously affected 62,000 square miles of forests in Eastern Canada, particularly balsam and white spruce.

It was also announced by Mr. Thompson that plans are being considered for post-war expansion of the department's telephone and high frequency radio system throughout the vast timberlands for the fire protection service. With better planes, the provincial air service will also be expanded after the war.

Goes with Packaging Institute

Dr. Charles F. Roos, well-known statistician and economist, and president of the Econometric Institute of New York City, has been appointed Economist for the Flexible Packaging Institute.

Dr. Roos' main work will be to project trends of buying which may affect the markets of the members of the Institute.

The Flexible Packaging Institute is a group of manufacturers cooperating with the Government on the packaging of war supplies and critical, perishable civilian commodities in specially made-to-order containers of treated papers, plastic and metal films.

Hudson Valley Group To Meet

The Hudson Valley Group of the TAPPI Empire State Section will meet at the Queensbury Hotel, Glens Falls, N. Y. on Tuesday, February 16, 1945. Frank Egan of the John Waldron Corporation will talk on coating machinery and equipment.

Stresses Value of School Forests

Stressing the value of school forests, W. T. Calhoun of the division of information and education, Wisconsin State Conservation Department, told a meeting of the Trees for Tomorrow, Inc., forestry scholarship committee at Stevens Point January 15, that "school forests and conservation clubs are the two most important projects within a school that can provide conservation work and study opportunities for students."

To further the work of conservation clubs in the 29 high schools in the Wisconsin River Valley, Mr. Calhoun said that plans are being made for a conservation and forestry institute to be sponsored by the conservation department and Trees for Tomorrow at Trout Lake, Wis., next summer.

Details of how Trees for Tomorrow will award forestry scholarships next spring were discussed.

Hooker Gets Fifth Award

The Hooker Electrochemical Company, Niagara Falls, N. Y. has for the fifth time won the Army-Navy Production Award for outstanding service in the production of war equipment.

Under Secretary of War, Robert P. Patterson, said in his letter of January 13, 1945 to the men and women of the Hooker Electrochemical Company, "You have maintained the fine record which brought you distinction—, and your standard of practical patriotism is one of which you may well be proud."

In addition to these awards to the Niagara Falls Plant, the Tacoma, Washington Plant of Hooker Electrochemical Company was awarded the Army-Navy "E" Flag on January 9, 1945.

Care of Heat Exchangers

Under the title of "Care and Handling of Heat Exchangers," The Whitlock Manufacturing Company, Hartford 7, Conn., has issued a booklet giving useful hints on the efficient use of heat transfer equipment.

Many important points in the installation of heat exchangers, their operation and maintenance are briefly and clearly explained. A short discussion of the mechanism of corrosion is an interesting part of the booklet. Copies may be obtained from the company at the above address.

Dominican Paper Imports

During the first five months of 1944 the Dominican Republic imported various kinds of paper as follows: wrapping paper in rolls, sheets or in the form of bags, 431,706 kilograms valued at $77,039; printing and writing paper, 284,707.4 kilograms valued at $50,183; all other kinds of paper, 203,145.5 kilograms valued at $87,731, says a report to the Department of Commerce. This makes a total of 919,558.9 kilograms valued at $214,953.

Wm. Gillen Heads Employee Group

William Gillen has been reelected president of the board of directors of the Thilmany Employes Association of the Thilmany Pulp and Paper Company at Kaukauna, Wis. L. C. Smith was reelected secretary, and the new vice president is John Deno.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending January 27, 1945

STOCKS

	High	Low	Last
A. P. W.	5⅛	4⅞	4⅞
Armstrong Cork Co.	45½	44	45½
Celotex Corp.	16⅛	15⅝	16⅛
Celotex Corp., pf.	19¾	19	19¾
Certain-Teed Products Corp.	8¾	7⅝	8¾
Certain-Teed Products Corp., pf.	142½	131	142½
Champion Paper & Fibre Co.	30	29½	30
Champion Paper & Fibre Co., pf.	115	114½	114½
Congoleum Nairn Co.	28	27¼	28
Container Corp. of America	28¾	27	28¾
Continental-Diamond Fibre Co.	12	11½	12
Crown-Zellerbach Co.	21½	20⅜	21½
Crown-Zellerbach Co., pf.	104½	103⅞	104½
Dixie Cup Co.	20¼	19	20
Dixie Cup Co.,—A	48¾	48¼	48½
Flintkote Co.	25⅞	24⅞	25¾
Flintkote Co., pf.	...	...	...
Robert Gair	5⅜	5¼	5⅜
Robert Gair, pf.	17½	17	17½
International Paper Co.	20⅞	19½	19⅞
International Paper Co., pf.	88½	84¾	86½
Johns-Manville Corp.	107½	102¾	107½
Johns-Manville Corp., pf.	...	...	...
Kimberly-Clark Corp.	42½	42	42
Mac Andrews & Forbes	31	30⅞	31
Mac Andrews Forbes, pf.	...	...	...
Masonite Corp.	44¼	41¼	44¼
Mead Corp.	13⅜	12⅜	13⅜
Mead Corp., pf. A—6%	...	...	...
Mead Corp., pf. B—5½%	95	95	95
National Container Corp.	14½	13½	14¼
Paraffine Companies, Inc	57	56	57
Paraffine Companies, Inc., pf.	...	...	...
Rayonier, Inc.	16⅝	16⅛	16½
Rayonier, Inc., pf.	35¼	34¾	35¼
Ruberoid Co.	34¾	33½	34¼
Scott Paper Co.	44	44	44
Scott Paper Co., pf.	109	109	109
Sutherland Paper Co.	34⅛	34⅛	34⅛
Union Bag & Paper Corp.	14⅞	14¼	14⅞
United Paperboard Co.	7⅛	6½	7⅛
U. S. Gypsum Co.	79	77	79
U. S. Gypsum Co., pf.	182	182	182
West Virginia Pulp & Paper Co.	24¾	23¾	24¾
West Virginia Pulp & Paper Co., pf.	110	109	110

BONDS

Abitibi Pulp & Paper Co. 5s '53	102⅛	101¾	102
Celotex Corp. 3¾s '55	...	...	...
Certain-Teed Products Corp. 5½s '48	103⅛	102	102¾
Champion Paper & Fibre Co. 4¾s '50	...	...	...
International Paper Co. 6s '55	108⅞	108¼	108¾
International Paper Co. 5s '47	105	104½	105
Mead Corp. 3½s '53	...	...	...
West Virginia Pulp & Paper Co. 3s '54	...	...	...

New York Curb Exchange

High, Low and Last for Week Ending January 27, 1945

STOCKS

	High	Low	Last
Great Northern Paper Co.	36⅜	35⅛	35⅛
Hummel-Ross Fibre Corp.	8½	7¾	7¾
St. Regis Paper Co.	6⅜	6	6⅜
St. Regis Paper Co., pf.	...	...	...
Taggart Corp.	5¼	5⅛	5⅛

BONDS

American Writing Paper Co. 6s '61	101½	101⅛	101½

I. P. Sued for $96,000,000

International Hydro Electric System trustee, Bartholomew A. Brickley, on January 25 brought suit in the Federal District Court of Boston against the Old Colony Trust Company as trustee of the International Paper and Power Company, and against International Paper Company itself for damages aggregating $96,000,000, according to the *Wall Street Journal*.

Mr. Brickley alleges that damages to that extent were suffered by International Hydro in the course of certain transactions with International Paper.

The Federal Court at Boston on November 13, 1944, appointed Mr. Brickley trustee with authority to operate its business until further order of the court. It directed him to institute suit against the International Paper Company based on causes of action which International Hydro Electric System may have against International Paper.

In 1943 two suits were brought by Class A shareholders of International Hydro Electric System, alleging identical causes of action against International Paper. One related to Paper's acquisition of New England Power Association common stock at prices alleged to aggregate over $62,000,000, and the other related to Hydro's acquisition from Paper of water power at a price of $31,700,000. The suits sought recision of these acquisitions or an accounting by International Paper.

Counsel for International Paper has given the opinion that there are no grounds for liability in either case.

Howard Smith Refunds Bonds

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 29, 1945—As already stated in this correspondence to be likely, Howard Smith Paper Mills, Limited, have sold a new issue of $4,000,000 3 per cent First Mortgage Serial Bonds. Proceeds of the issue will be applied towards redemption on March 1 next of $700,000 4 per cent and $3,300,000 4¼ per cent First Mortgage Bonds of Howard Smith Paper Mills Limited, together with $125,000 3½ per cent and $700,000 4¼ per cent First Mortgage Bonds of Canada Paper Company, a subsidiary.

Upon completion of this financing the new issue will be the only outstanding funded debt of the company and its subsidiaries. Interest charges will be reduced from $202,375 on the bonds being retired to $120,000 on the new issue, with further reductions as the new serial bonds mature.

Interest on funded debt in 1931 amounted to $561,000, compared with interest charges on the new issue of $120,000. The refunding effects a reduction of $825,000 in the par value of consolidated debt outstanding.

A. L. Smalley Joins St. Regis Paper Co.

R. K. Ferguson, president, St. Regis Paper Company, announces that A. L. Smalley has joined the company in the capacity of labor advisor to the president. Mr. Smalley is eminently fitted to assist in effecting and maintaining close understanding and cooperation between management and labor.

Prior to the war, he was active in the ranks of organized labor and served on the national executive committee under D. W. Tracy, now Assistant Secretary of Labor.

In 1941, Mr. Smalley was called to Washington, and since then has served as labor advisor to Arthur Whiteside, Frank Keenan and W. Y. Elliot, vice-chairman of the War Production Board. He will assume his position with St. Regis on or about February 15, and will operate from the executive offices in New York.

Abitibi Bonds Show Strength

TORONTO, Ont., January 29, 1945—Strength shown by Abitibi Power and Paper Company bonds in recent trading is said to arise f om calculations as to their possible price if and when the proposed reorganization plan is approved. The old bonds are quoted at around $112 bid to $112½ asked, while the new bonds on a "when issued" basis are quoted $96½ bid to $99½ asked.

The chief factor which is expected to limit the bond price is that 52.27% of the principal of each new bond will represent acc ued interest and presumably will be ultimately taxable. Thus the value to any

individual investor will depend on his tax position or on his ability to dispose of his bonds before they are called for redemption.

It is reported that there is some institutional interest in the new bonds. In view of the tax position of many institutions, many brokers feel that Abitibi bonds will eventually be accumulated by them, and that their estimate of the value of Abitibis will largely govern the price.

Geo. K. Ferguson Is Reelected

WATERVLIET, Mich., January 29, 1945—George K. Ferguson was re-elected president of the Watervliet Paper Company at a meeting of directors held January 17 in the Park American Hotel, Kalamazoo. Other officers elected are: Charles B. Hays, of Kalamazoo, vice-president; L. B. Anderson, Kalamazoo, secretary; James B. Balch, Kalamazoo, treasurer; Arthur L. Miller, Watervliet, assistant secretary, and Victor F. Quigley, Watervliet, assistant treasurer.

The directors' meeting followed a meeting of the stockholders at which time directors were all reelected as follows: George K. Ferguson, James B. Balch, Charles B. Hays, Arno R. Schorer, Fred Scheid, Rockwell A. LeRoy, Wilbur C. Hunting, Chester I. Monroe and L. B. Anderson.

President Ferguson's report showed the local industry to be in fine shape despite war-time difficulties.

Mr. Ferguson has served 15 years as president and general manager of the local concern. Mr. Hays has held the office of vice-president of the concern since its organization in 1911 and other officers have had long years of service.

Brantford Co. Nets 85 Cents

The Brantford Roofing Company and its wholly owned subsidiaries, reported a slight easing for the fiscal year ending October 31 last. Subsidiaries are the Brantford Roofing (Maritimes) and the Brantford Felt and Paper Company of Thorold, Ont.

The report shows net profit of $37,193, equal to 85 cents on the common, compared with net of $41,489 in the previous year, equal to 86 cents on the common, after payment of $4,070 to preferred holders. In the 1943 period the preferred was redeemed. Working capital increased by $67,702 to $183,256 in the 1944 period.

National Container Votes Dividend

The National Container Corporation, Delaware, has voted a quarterly dividend of 20 cents to common shareholders, payable on March 10. The previous payment was 15 cents last December. In September, 1944, the stock was split two-for-one, prior to which the company paid 25 cents quarterly.

Strathmore Nets $1.85

The Strathmore Paper Company for the year to October 31, reports a net income of $221,802, or $1.53 a common share, against $249,789, or $1.85 a common share, for year to October 31, 1943; net sales $4,301,430, against $4,729,785.

Rayonier Inc. Votes Dividend

Directors of Rayonier Incorporated have declared the regular quarterly dividend of 50 cents per share on the $2 dividend cumulative preferred stock, payable April 2, to stockholders of record March 16.

J. O. Ross Improves Laboratory

As a result of pressing war conditions the J. P. Ross Engineering Corporation, 350 Madison avenue, New York 17, N. Y., has substantially improved its testing and development laboratory at New Brunswick, N. J.

In a booklet entitled, "The Ross Laboratory—where research today produces results for tomorrow," a description of the new facilities is presented. The Ross laboratory is now equipped to permit commercial tests to reproduce actual field conditions. While it is not the object to engage in pure development work, the services of the laboratory are available to industrial concerns interested in determining efficient methods for processing. Copies of the booklet may be obtained from the corporation's New York office given above.

N.A.W.M.D. Cancels Convention

While the War Mobilization Director acknowledged and thanked the National Association of Waste Material Dealers, Inc., for its recent telegram expressing its willingness to cancel its convention without making any application to the war committee on conventions, and stated that the telegram was being referred to that committee, the action of the War Committee on Conventions in turning down 108 of the first 110 requests received (the two approved being the Red Cross and the United War Fund), has caused the above association definitely to cancel its arrangement for its March convention but it may hold it later in the year if it can do so with the full approval of the war committee on conventions.

O.D.T. Commends TAPPI

The Technical Association has received the following letter from Richard H. Clare, Secretary of the War Committee on Conventions:

"Colonel Johnson (director of the Office of Defense Transportation) has asked me to express his appreciation of your patriotic action in cancelling the annual meeting of the Technical Association of the Pulp and Paper Industry which was to have been held February 19-22.

"This action is of material assistance in the effort to reduce the present burden on our transportation and service facilities."

Paul J. White Unanimously Renominated

A nominating committee elected at the December meeting of the board of directors of the National Association of Waste Material Dealers, Inc., and made up of Abner Koplik of Castle & Overton, Inc., Arthur Rosenfeld of Wm. Steck & Co., Inc., and Sol London operating individually, with David Feinburg of David Feinburg Company, Medford, Mass., acting as advisory member, met recently and were unanimous in their choice of Paul Jos. White of the Great Eastern Packing and Paper Stock Corporation for re-nomination as president of the association.

Boston Paper Men in Florida

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 29, 1945 — Frank B. Cummings, secretary of the Boston Paper Trade Association, left today for Altamonte Springs, Fla.

Matthew O. Byrne, treasurer of Whitney Brothers, Inc., prominent in the Boston Paper Trade Association, is at Daytona Beach, Fla.

Philadelphia Paper Men Dine

PHILADELPHIA, Pa., January 29, 1945—Upwards of 250 representatives from mills, the Armed Forces, civic and professional life were in attendance at the annual meeting and banquet of the Philadelphia Paper Trade Association held recently at the Warwick Hotel. The high quality and happy blending of wisdom, and the wit, oratory and music combined with the timeliness and relevancy of matters of importance in a delightful atmosphere of good fellowship and good will will make this banquet eminently outstanding.

Ralph G. Luff, head of D. L. Ward Company, presided. Seated with him at the head table were members of the Armed Forces among whom were Major T. H. B. Smythe, U. S. Quartermaster Corps, and president of J. L. N. Smythe Company, Captain Cecil Bentley, Ordnance Department, U. S. Army; Lieut. Edward V. Furlong, U. S. Naval Reserve; Lieut. Walter R. Kurtz, Jr., U. S. Quartermaster Corps. Together with the civilian guests, Hon Josh Lee of the Civil Aeronatutics Board and Archie D. Swift, president of Central-Penn National Bank seated at the head table, were Henry L. Adler, Fred Balch, A. H. Chamberlain, Ross Fishburn, Thomas S. Furlong and W. Predmore.

Previous to the banquet, the annual business meeting was held and the following were elected officers for 1945: Ralph G. Luff, president; Frederic S. Balch, vice-president of Fne Paper Division; Frank A. O'Neill, Jr., vice-president of Wrapping Paper Division; Winfield Predmore, treasurer, and C. Webster Mather, secretary. Also elected to the board of governors for three-year terms were George Weaver and Edward T. Walter, Jr., for Fine Paper Division, and for the Wrapping Paper Division C. Webster Mather and Nate Saxe.

G. E. Developments of 1944

Guy Bartlett in enumerating the electrical developments of 1944 of the General Electric Company, writes as follows regarding paper and textiles:—

"Of interest to the paper, printing, textile, and numerous other industries were an electronic rewinder drive and a new type of electronic cut-off register control. Various industrial processes involve a rewinding operation in which a material such as paper, textiles, or film is unwound from one reel and, immediately following certain operations such as slitting and inspection, is rewound on another reel. The drive generally incorporates such features as wide operating speed range, wide adjustment of tension, and reversing. An electronic control was developed to control the motors of such a drive in response to speed and tension signals, thereby maintaining speed and tension corresponding to the settings of the controls.

"A new type of cut-off register control was made, employing long life, high-vacuum tubes throughout, eliminating the slower magnetic contractors used in some previous types. The system provides the means to apply corrections in proportion to the amount of misregister, and also in proportion to web speed, thus providing a control which operates at maximum efficiency under all operating conditions."

PUBLIC AUCTION SALE

OF COMPLETE COATED PAPER PRODUCTS PLANT

ENTIRE MACHINERY, EQUIPMENT, FIXTURES, OFFICE FURNITURE, SUPPLIES, ETC.

Comprising Plant of

WALTHER & COMPANY, Inc.

(Mfgrs. of coated, embossed, printed, and glazed paper who are discontinuing manufacturing)

On the Premises 102 KANE ST. BROOKLYN, N. Y.

THURSDAY, FEB. 15, 1945 (10:30 a.m. E.W.T.)

Consisting of Embossing Machines, Calenders, Sheeters, Slitters, Glazing Machines, Coating Machines, Varnishing Machines, Printing Machines, with drying and festooning attachments, Rewinders, Engraved Steel and Copper Rolls, Color Mixing and Grinding Machines, Machine Shop—comprising Lathes, Shapers, Drills . . . and hundreds of other items, including Shafting, Belting, lift trucks, OFFICE EQUIPMENT, etc.

SEVERAL HUNDRED ENGRAVED ROLLS—STEEL, COPPER AND PAPER IN VARIOUS DESIGNS AND SIZES FOR EMBOSSING AND PRINTING.

MACHINES STILL ON ORIGINAL FOUNDATION: PLANT WILL BE IN ACTUAL OPERATION UNTIL JAN. 25, 1945.

INSPECTION: FEB. 8 TO SALE DATE

(Otherwise by appointment.)

WRITE AUCTIONEER FOR FREE DETAILED AND ILLUSTRATED CIRCULAR

WRITE WIRE PHONE

INDUSTRIAL PLANTS CORPORATION

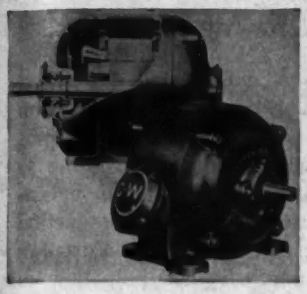
Auctioneers, Appraisers, Liquidators

90 WEST BROADWAY, NEW YORK 7, N. Y.

316 So. LaSalle St., Chicago, Ill. (Toledo, Ohio—Pittsburgh, Pa.)

New Protected Type Motor

A new motor, combining the surplus capacity of the conventional open motor with protection against dripping liquid, falling metal chips and other foreign matter, has been developed by the Crocker - Wheeler Division of Joshua Hendy Iron Works at Ampere, N. J.



Rated 40 C rise, full - load continuous duty, with a 15 per cent service factor, Protected - Type Motors provide added protection at open motor prices. At present, these motors are available in sizes up to and including the 284 frame. Mounting dimensions conform to the standards of the National Electrical Manufacturers Association.

There are no openings in the frame or shields above the horizonal center line. This, together with the shielded construction of the ventilating openings, makes Protected-Type Motors suitable for machine tool and similar applications where other types of enclosures have been required in the past.

Centrifugal seals permit use of softer grease for better lubrication and longer bearing life. The company's Alucast rotor construction, in which the bars, fans and end rings are cast in one operation from aluminum alloys, is employed.

Other features of these many-purpose motors include: heavy cast frame construction, coils protected by vinyl acetal insulation, interchangeable front and rear shields, and specially designed guides for directing cooling air over all surfaces.

R. M. Tucker Made Sales Manager

Appointment of Roy M. Tucker as regional sales manager has been made by O. W. Mielke, general manager of Blake, Moffitt & Towne, large pioneer paper distributing organization. Mr. Tucker, a resident of Stockton, is widely known throughout the San Joaquin Valley where he has represented the company for the past ten years. In addition to his business activities, he has devoted much time to civic affairs and welfare work. He is a director and first vice president of the Stockton Chamber of Commerce and a past chairman of its Public Relations Committee, past president of the Stockton Convention Bureau, past chairman Branch Firms Division Community War Chest and a member of the Finance Committee for War Loan Bond Drives. He is also a first vice president of the Stockton Lion's Club and Branch Firms Division Chairman for War Loan Bond Drives.

In his new position, Tucker will supervise the sales of the company's Stockton, Oakland, Sacramento, San Jose and Fresno Divisions and will have his offices at the San Francisco headquarters.

Blake, Moffitt & Towne, one of the pioneer wholesale houses on the Pacific Coast operate 16 divisions and are this year celebrating their 90th anniversary, having been founded in 1855.

ANY ★ SIZE

The IDEAL Material for Tanks and Chests

★ ANY SHAPE

★ MAXIMUM STORAGE ★ PROPER AGITATION ★

Kalamazoo Vitrified Glazed TILE

PERFECT CLEANLINESS

Chests available now with complete Erection Service

KALAMAZOO TANK & SILO CO. Kalamazoo Michigan

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger, Editor

COMING EVENTS IN PAPER INDUSTRY

The American Paper and Pulp Association and affiliated organizations, The Technical Association of the Pulp and Paper Industry, and The National Paper Trade Association, because of war conditions, have cancelled their conventions which were tentatively arranged to be held in New York, February 19-22, 1945.

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel. Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club. Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

Empire State Section. Technical Association of the Pulp and Paper Industry—Second Thursday of each month at the Woodruff Hotel, Watertown, N. Y.

Chicago Professional Paper Group—Third Monday of each month except July and August at Chicago Bar Association, Chicago, Ill.

WORLD'S PAPER AND PULP SUPPLY

The estimated world production of paper in the first year after Victory in Europe will be below world consumption needs by an estimated 1,027,000 short tons. In the second post-war year the analysis of world conditions indicates that production of paper will be greater than consumption needs, with an apparent surplus of 1,011,000 tons; in the third year after V-E Day world production is expected again to be greater than consumption needs by 330,000 tons. This estimate of the future is summarized from "The World's Paper and Wood Pulp Industry Before and After V-E Day," a study of the industry, released by the Department of Commerce, Washington 25, D. C. on January 6, 1945. The foreword of this ambitious study states that it "attempts to project trends in the pulp and paper industry in the first three years following victory in Europe. Estimates on production and consumption needs are intended to be practical and realistic." The report is by W. LeRoy Neubrech, Chief, assisted by Donald Collier of the Pulp and Paper Unit, and Charles W. Boyce, of the U. S. Department of Commerce. The contents covers the world's production and consumption needs for paper and wood pulp, the United States production and indicated requirements, complete with many tables and charts on production and consumption, their trends, etc.

In its summary the report states that, "The anticipated world paper deficit in the first post V-E year is accounted for principally by continued heavy military demands, particularly by the United States to carry on the war with Japan, coupled with rising civilian consumption needs in many countries. In the second year after V-E Day the apparent world surplus is brought about by a somewhat enlarged world production of paper accompanied by a substantial reduction in paper needs for military purposes. The United States paper consumption needs in the second year are estimated at about 1,500,000 tons less than in the first post-war year, while consumption needs in other countries throughout the world will have increased by approximately 2,000,000 tons, but at the same time world production will have risen about 2,600,000 tons."

In reference to the wood pulp supply the report goes on to say that, "World wood pulp production the first three years after V-E Day will be in approximate balance with consumption needs, according to expectations as set forth in this report, with indications of moderate surpluses. The world's production of wood pulp in the first year after the European war, including 600,000 tons of wood pulp now in storage in Sweden, is estimated at 24,348,000 tons, compared with estimated consumption needs of 23,822,000 tons, indicating a surplus of 526,000 tons. For the second and third years after the end of the European war estimates disclose a smaller surplus in the world's production of wood pulp as compared with consumption needs. For the second post-war year this surplus is estimated at 124,000 tons and for the third year at 113,000 tons."

In reference to the Northern European countries the report states that, "Production of wood pulp in the Northern European countries in the first year after V-E Day is estimated at 4,377,000 tons, to which may be added 600,000 tons of Swedish pulp now in storage, making a total of 4,977,000 tons. Of this amount, it is estimated that surplus over and above consumption needs of 3,354,000 tons will be available for export to other consuming countries. This compares with a 4,832,000 ton surplus in 1937. Estimates for the second post-war year disclose that the Northern European countries will have 3,728,000 tons for export and for the third year an export surplus of 4,074,000 tons. If the United States is to meet its consumption needs for wood pulp in the first year after victory in Europe, it is estimated that 1,995,000 tons will have to be imported from foreign sources. This allows for exports of 275,000 tons which must be equalized by an equivalent amount of imports in addition to the net deficit between production and consumption needs. Imports in 1937 were 2,395,000 tons. For the second year after victory in Europe, the United States will need 1,938,000 tons of foreign pulp and in the third year 1,920,000 tons, allowing for United States exports, if near-capacity operations are achieved by the domestic industry. It is thereby indicated that United States dependence upon foreign supplies in the second and third years after V-E Day may be somewhat less than imports in most years immediately preceding 1940."

In its estimate of the end-uses of paper the report points out that, "The United States consumption needs for paper in the first year after the European war, which will include about 4,369,000 tons for military uses, is estimated at 22,522,000 tons, amounting

to 68% of expected world consumption needs. The estimated domestic production of paper is 18,611,000 tons, which represents nearly full operation at anticipated practical operating capacity. The net United States deficit is thereby indicated at 3,911,000 tons, whereas the surplus available from other world countries is 2,884,000 tons, leaving an apparent world shortage of 1,027,000 tons."

Declaring that future consumption will be increased, the report states that, "The estimates indicate that the post-war civilian paper consumption needs in the United States will be approximately 5,000,000 tons per year greater than they were in pre-war years. American wood pulp consumption needs will be approximately 4,000,000 tons in excess of pre-war consuming levels. It is expected that so long as the economy of the United States remains at stable, high levels, consumption needs will be correspondingly high. Rises or declines in the level of the domestic national economy will be accompanied by proportionate increases or decreases in consumption needs for both paper and wood pulp." Single copies of the above report, Industrial Series No. 14, will be available upon written request to the Department of Commerce.

Paper Merchants Meet at Richmond

The annual meeting of the Southeastern Paper Trade Association was held Thursday, January 25, at the Rueger Hotel, Richmond, Va.

The meeting was well attended by members from the area. In addition to local matters introduced from the floor, discussions of more broad matters embracing the present and the future were conducted by A. H. Chamberlain, executive secretary of the National Paper Trade Association, and W. G. Leathers, assistant secretary.

The loss through fire of the warehouse used by the United Paper Company had a saddening effect on the group, by whom "Bob" Sycle and "Buck" Buchanan are held in warm regard. Expressions of sympathy and offers to help in any way possible in these trying times were prevalent.

The new officers elected for 1945 to carry on the good work of the preceding officers are: President, E. C. Mead, Richmond Paper Company, Richmond, Va.; Vice President (Fine), H. S. Hundley, B. W. Wilson Paper Company, Richmond, Va.; Vice President (Wrapping), F. K. Williams, Caskie Paper Company, Inc., Lynchburg, Va.; Secretary, A. R. Leiserson, American Paper Company, Inc., Richmond, Va. and Treasurer, W. Disney Cole, Epes-Fitzgerald Paper Company, Richmond, Va.

Kennedy Valve Gets Second Star

The Kennedy Valve Manufacturing Company, of Elmira, N. Y. has been awarded a second star on their Maritime pennant for continued excellence in production of valves for the War program. This award has been won by comparatively few manufacturers, and was granted to the Kennedy employees for their extended efforts to maintain prompt completion of the many orders for Kennedy valves for wartime shipbuilding requirements.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1944		Corresponding Weeks—1943	
Dec. 16	89.2	Dec. 18	89.9
Dec. 23	85.5	Dec. 25	68.6
Dec. 30	61.0	Jan. 1,'44	70.3
Jan. 6,'45	81.0	Jan. 8	90.2
Jan. 13	88.7	Jan. 15	89.5
Jan. 20	*89.0*	Jan. 22	86.1

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1943	87.2	88.9	89.5	88.7	91.4	84.8	84.3	91.0	88.3	89.6	89.6	82.0	87.8
1944	88.7	88.5	88.1	87.6	88.7	89.8	80.3	90.6	88.2	92.5	91.9	*84.4*	88.4

COMPARATIVE YEARLY SUMMARIES

	1937	1938	1939	1940	1941	1942	1943	1944
Year Average	79.8	71.5	83.4	85.6	97.4	90.4	87.8	*88.4*

*Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year Avg.
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	83	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	94	89	96	94	94	93	87	93
1944	90	96	95	96	96	96	85	96	92	95	95	*85*	93

Week ending Dec. 16, 1944—94 Week ending Jan. 6, 1945—80
Week ending Dec. 23, 1944—94 Week ending Jan. 13, 1945—95
Week ending Dec. 30, 1944—57 Week ending Jan. 20, 1945—*94*

†Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

Arthur D. Little Elects Officers

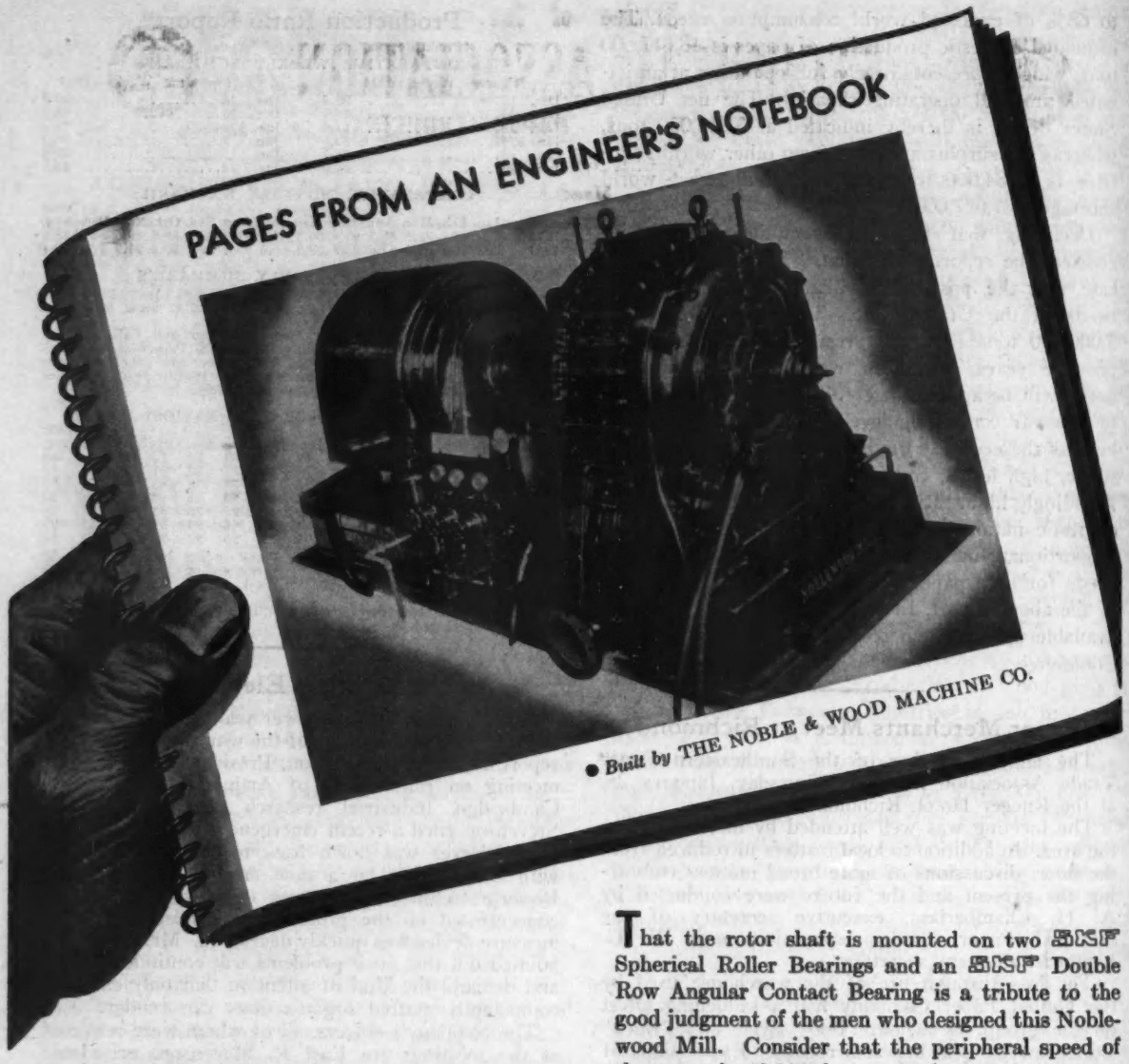
Keeping technical manpower available in the laboratories is vital at this stage of the war, according to the report of Earl P. Stevenson, President, at the annual meeting on January 24 of Arthur D. Little, Inc., Cambridge, industrial research organization. Mr. Stevenson cited a recent emergency in which a front-line observer was flown back to the United States with information on a new enemy defense tactic. Because technical manpower could be immediately concentrated on the problem, a promising countermeasure device was quickly developed. Mr. Stevenson pointed out that such problems will continue to arise and demand the kind of attention that only existing, competently staffed organizations can render.

The company's officers, all of whom were reelected at the meeting, are Earl P. Stevenson, president; Raymond Stevens, Thorne L. Wheeler and Roger C. Griffin, vice presidents; Henry G. Powning, treasurer; Frank N. Houghton, secretary; and Russell H. Stephens, comptroller. Directors for the coming year are W. Cameron Forbes, Horace S. Ford, Randolph C. Grew, Roger C. Griffin, Royal Little, Henry G. Powning, Charles E. Spencer, Jr., Raymond Stevens, Earl P. Stevenson and Alexander Whiteside. Raymond Stevens, who was added to the board at this meeting, has been with Arthur D. Little, Inc., since 1920 and vice president since 1933.

Brown Co. Leases Oil Rights

Brown Company, producer of pulp and paper with mills at Berlin, N. H., and La Tuque, P. Q., has just concluded the leasing of oil drilling privileges on its land holdings in Florida to the Humble Oil and Refining Company, it was announced last week by F. G. Coburn, president of Brown Company.

The property involved consists of about 72,000 acres southeast of Lake Okeechobee which Brown Company originally acquired for agricultural purposes.

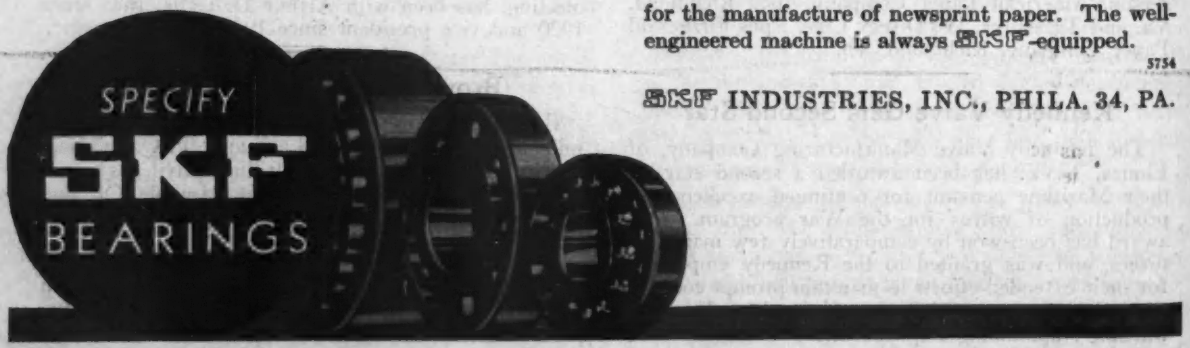


CONVERTING 35 TONS PER DAY ON SKF BEARINGS

That the rotor shaft is mounted on two SKF Spherical Roller Bearings and an SKF Double Row Angular Contact Bearing is a tribute to the good judgment of the men who designed this Noblewood Mill. Consider that the peripheral speed of the rotor is 12,000 feet per minute, 1800 r.p.m., yet the *high load carrying capacity* is always available for useful work. There's also *equalized load distribution.* There's *no fussy adjustments.* Always there's *correct alignment and smooth, carefree running* that's a big help in the daily conversion of between 20 and 35 tons of groundwood tailings or rejects (formerly waste material) into fine fibrous pulp for the manufacture of newsprint paper. The well-engineered machine is always SKF-equipped.

5754

SKF INDUSTRIES, INC., PHILA. 34, PA.



Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

Drum Test for Fiberboard Shipping Containers*

TAPPI Suggested Method T 800 sm-44

This method describes two procedures for making tests of fiberboard shipping containers or boxes with a gross weight not over 120 pounds, nor any dimension exceeding 20 inches. Procedure *A* is designed to measure the ability of the container to resist rough handling, and Procedure *B* to measure the ability of the container to afford protection to its contents. *See* also T 802 m, Drop Test for Fiberboard Shipping Containers, and T 801 sm, Impact Resistance of Fiberboard Shipping Containers (Conbur Test).

Apparatus

1. *Drum.* The drum (commonly known as the 7-foot drum) shall be in the form of a geometrical prism, as shown in Fig. 1, whose bases are regular hexagons and whose lateral faces are rectangles, the dimensions of which are 4 feet in the direction parallel to the central axis by 3.5 feet. The drum shall revolve at a speed of 1 5/6 r.p.m. about its central axis, which shall be mounted horizontally.

On the inside of each face of the drum, baffles or hazards shall be arranged as shown in Fig. 1. A conical projection may be positioned on one face to simulate a puncture hazard, but its inclusion shall be noted in the report. The inner metal faces of the drum shall be free of rust and waxed and polished in order to reduce friction to a minimum. Details of the materials for construction are given in Table I.

TABLE I. MATERIAL SPECIFICATIONS FOR FIG. 1

Amount	Designation Part		Actual Size, inches				
	FACE No. 1	No.	Length	Width	Thickness	Material	Notes
1	Sill	1	52½	7	2½	Wood	Cut to fit and notch
1	Sill	2	21½	7	2½	Wood	Cut to fit
1	Barrier	3	26¾	13¾	1¼	Wood	Cut to fit
2	Braces	4	13	6⅛	1¾	Wood	Bevel and notch
1	Cross brace	5	13	5	1⅞	Wood	Bevel
1	Steel shoe	6	66	2½	3/16	Steel	Bend to fit
1	Filler	7	26	11½	1¼	Steel	Cut to fit
	FACE No. 2						
1	Sill	8	47½	7	3½	Wood	
1	Steel shoe	9	47½	2½	3/16	Steel	
1	Filler	10	29	10½	1¼	Wood	Cut to fit
1	Filler block	11	15	6¾	2½	Wood	Cut to fit
	FACE No. 3						
1	Sill	12	53	7	2½	Wood	Cut to fit and notch
1	Sill	13	21	7	2½	Wood	Cut to fit
1	Barrier	14	27	13	1¼	Wood	Cut to fit
2	Braces	15	12½	6⅛	1¾	Wood	Bevel and notch
1	Cross brace	16	13	5	1⅞	Wood	Bevel
1	Steel shoe	17	66½	2⅛	3/16	Steel	Bend
1	Board	18	53½	7	1½	Wood	Cut to fit
	FACE No. 4						
1	Conical block	19				Cast iron	
	FACE No. 5						
1	Sill	20	53	7	2½	Wood	Cut to fit and notch
1	Sill	21	20½	7	2½	Wood	Cut to fit
1	Barrier	22	26	12½	1¼	Wood	Cut to fit
2	Braces	23	12½	6⅛	1¾	Wood	Bevel and notch
1	Cross brace	24	13	5	1⅞	Wood	Bevel
1	Steel shoe	25	66	2½	3/16	Steel	

Note: All wood parts to be beech, birch, oak or hard maple.

Definitions

IDENTIFICATION OF THE FACES, EDGES, AND CORNERS OF THE BOX

Facing one end, (with the manufacturer's joint on the observer's right) the top of the box or shipping container is designated as 1, the right side as 2, the bottom as 3, and the left side as 4. The near end is designated as 5 and the far end as 6. The edges are identified by the numbers of the two faces which make that edge, as for example, 1-2 identifies the edge where the top and right side meet and 2-5 the edge

*This method has been adopted by the American Society for Testing Materials under Designation D. . . .
This method is suggested by the Container Testing Committee as being the most suitable to date. It is not, however, a TAPPI Standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y.

having the manufacturer's joint. The corners are identified by the numbers of the three faces which meet to form that corner, e.g., 1-2-5 identifies the corner where the top, the right side, and the near end meet.

Test Specimen

When the box is being tested for the protection of the contents, the box shall be packed with the contents designed to be shipped therein. When the box is being tested for its resistance to breaking open, it shall be packed (1) with the contents for which it is designed, or (2) with a designated dummy load, e.g., cans filled with water or with asphalt, as may be specified.

At least five and preferably ten representative boxes shall be tested. The boxes shall be conditioned for testing according to TAPPI Standard T 402 m. During the conditioning of empty boxes the flaps of one-piece boxes shall be open, and the parts of boxes composed of two or more pieces shall be exposed to the conditioning atmosphere separately. The boxes or their separate parts shall be conditioned until there is no significant change in weight between two successive conditioning periods of 24 hours each. The conditioning atmosphere shall have free access to all surfaces of empty boxes or their component parts, and to all outer surfaces when filled.

The flaps shall be securely closed by stitching or with a suitable adhesive. If an aqueous adhesive is used, additional conditioning for a period of at least 24 hours shall be required before testing.

Procedure A

This procedure is to measure the ability of the container to resist rough handling.

Start the test with the container placed in the crotch of the hazard on face No. 1 of the drum with the top face 1 of the container up and end 5 and side 2 against the hazard. As the test continues, record the

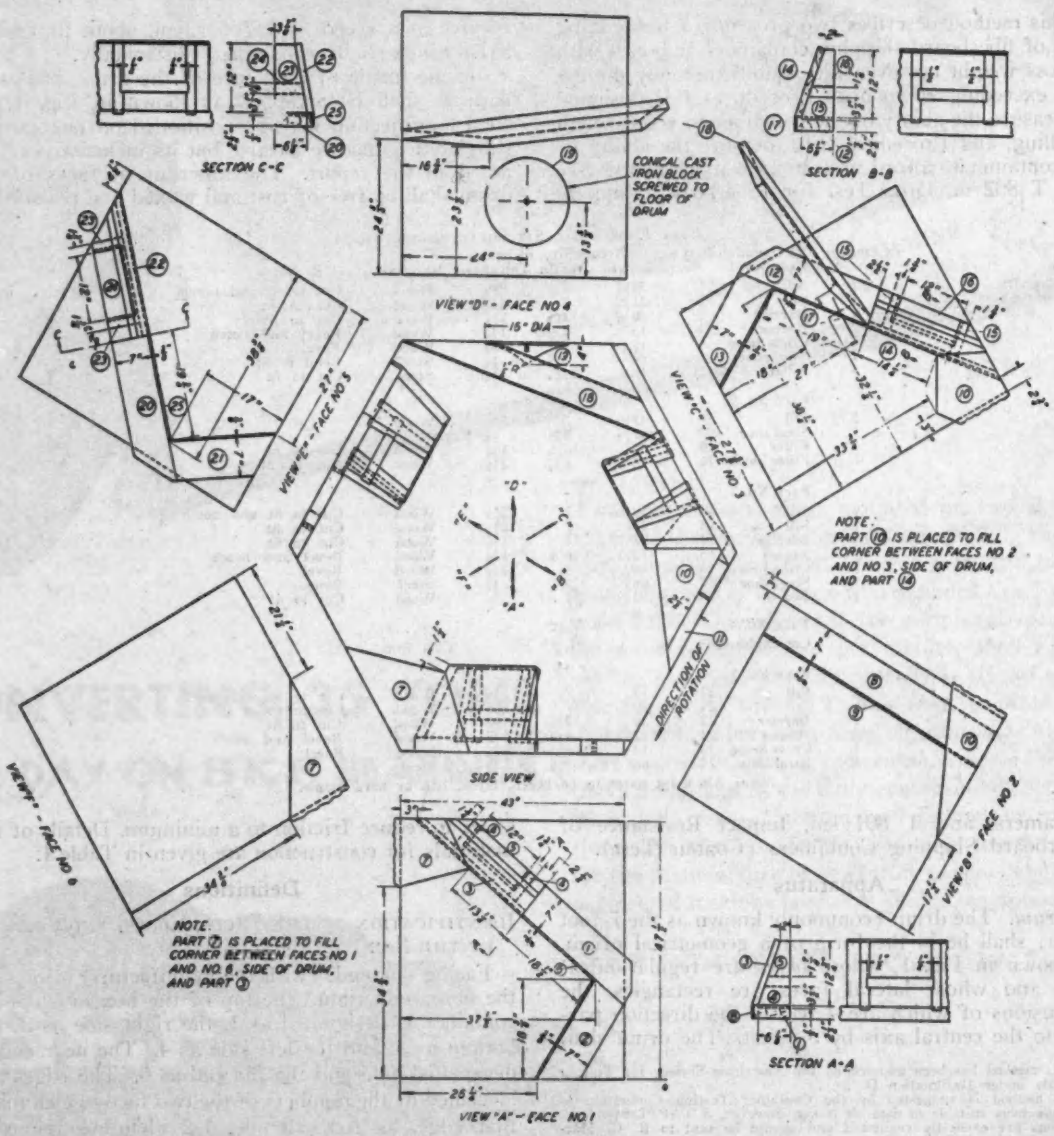

SECTION C-C
CONICAL CAST IRON BLOCK SCREWED TO FLOOR OF DRUM
VIEW "D" - FACE NO 4
SECTION B-B
VIEW "E" - FACE NO 5
VIEW "C" - FACE NO 3
NOTE: PART (16) IS PLACED TO FILL CORNER BETWEEN FACES NO 2 AND NO 3, SIDE OF DRUM, AND PART (14)
DIRECTION OF ROTATION
SIDE VIEW
VIEW "F" - FACE NO 6
VIEW "B" - FACE NO 2
NOTE: PART (7) IS PLACED TO FILL CORNER BETWEEN FACES NO 1 AND NO 6, SIDE OF DRUM, AND PART (1)
SECTION A-A
VIEW "A" - FACE NO 1

FIG. 1.
Details of Drum Tester

initial appearance and the development of damage to the container, such as tears and punctures. The drum may be stopped during the test for closer inspection of the container. Count each revolution of the drum as 6 falls and record the number of falls sustained by the container up to the time of occurrence of any damage together with a description of the damage. In the record of the test, designate the faces, edges, and corners as described above. Continue the test until the container fails. Failure shall have occurred when any edge has ruptured along its entire length or any portion of the contents has spilled.

Procedure B

This procedure is to measure the ability of the container to provide protection to its contents.

Start the test with the container placed in the starting position described in Procedure *A* and continue the test (1) for a definite number of falls as given by the formula:

$$\text{Number of falls} = \frac{125 - \text{gross weight in pounds}}{125 \times \text{ratio of greatest to least dimension}}$$

or (2) until failure as described in Procedure *A* occurs; or (3) until breakage of the content is evident (as with spilling of liquids), whichever occurs first.

Record the progressive damage to the container as the test continues. At the end of the test, carefully appraise and record the condition of the contents.

Note: *Procedure B* is not generally used for containers with a gross weight over about 75 to 80 pounds. In such cases a drop test (T 802 m) usually gives more valuable information.

Report

Include the dimensions of the box and its complete structural specifications, the kind of fiberboard, the spacing and size of stitches, the method of strapping, the gross weight, a proper description of the contents and whether they were originally loosely or tightly packed. A statement should also be added to the effect that the tests were made in full compliance with this method.

A complete report should include, in addition to the above, a detailed record of each test including the description of damage to the case and contents, together with whatever observations may be helpful to convey a proper interpretation of the results.

Additional Information

In order to compare the protection afforded by different shipping containers, the following basis is suggested as a means of assessing the average damage to each container:

Damage Rating	Description
0	No appreciable damage.
2	Damage of a noncritical nature.
6	So dented or torn as to be on the verge of leaking.
10	A leaking can or package.

Reference

Newland, J. A., and Wilson, T. R. C., "Development of a Box-testing Machine and Some Results of Test," American Soc. for Testing Materials *Proceedings* 16, Part 2:320-342 (1916).

Impact Resistance of Fiberboard Shipping Containers*

TAPPI Suggested Method T 801 sm-44

The impact resistance of fiberboard containers or boxes is an arbitrary measurement of the energy required to rupture the box by impact when successive blows of increasing force are applied in the prescribed manner. The result is expressed as the final distance, in feet, travelled by a dolly, carrying the loaded box, along an inclined plane to a bumper before rupture of the box occurs. The method gives results comparable to those obtained by the drop tests (TAPPI Standard T 802 m).

This method may also be used to determine the comparative efficiency of packing heavy articles liable to damage by impact, and for this purpose somewhat greater control over the manner of the impact is possible than with the drop test, but the friction between the box and the dolly top introduces a small uncontrollable variable. If the test box is fixed to the dolly, the weight of the dolly itself increases the intensity of the blow.

Apparatus

1. *Incline impact testing device* as developed by the Freight Container Bureau, Association of American Railroads, 30 Vesey Street, New York City. This is shown in Figs. 1 and 2.

The testing device consists of a track inclined 10° to the horizontal plane and provided with a wooden bumper of sturdy construction. The bumper is placed at the bottom of and perpendicular to the track. The face of the bumper is constructed of 2-inch by 4-inch wooden boards providing a flush surface for contact with the test boxes. It is reinforced at the rear as shown in Fig. 2 with 4-inch by 4-inch wooden braces to provide rigidity, and the entire bumper is tied down in position with two ⅝-inch steel rods. A dolly (Fig. 2) with roller bearing wheels rolls upon angle-iron tracks down the inclined plane. The inclined plane shall be marked at 1-foot intervals between the distances of 6 and 20 feet from the bottom and means shall be provided for holding the dolly at these marked points. Before carrying out a test, the dolly wheels and rails shall be greased to reduce friction.

The upper face and edges of the dolly are covered with three-ply cotton canvas of the type used for paper-machine driers.

2. *Pebbles*. One hundred pounds or more of egg-sized, smooth-surfaced flint pebbles.

*This method is suggested by the Container Testing Committee as being the most suitable to date. It is *not*, however a TAPPI standard. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y.

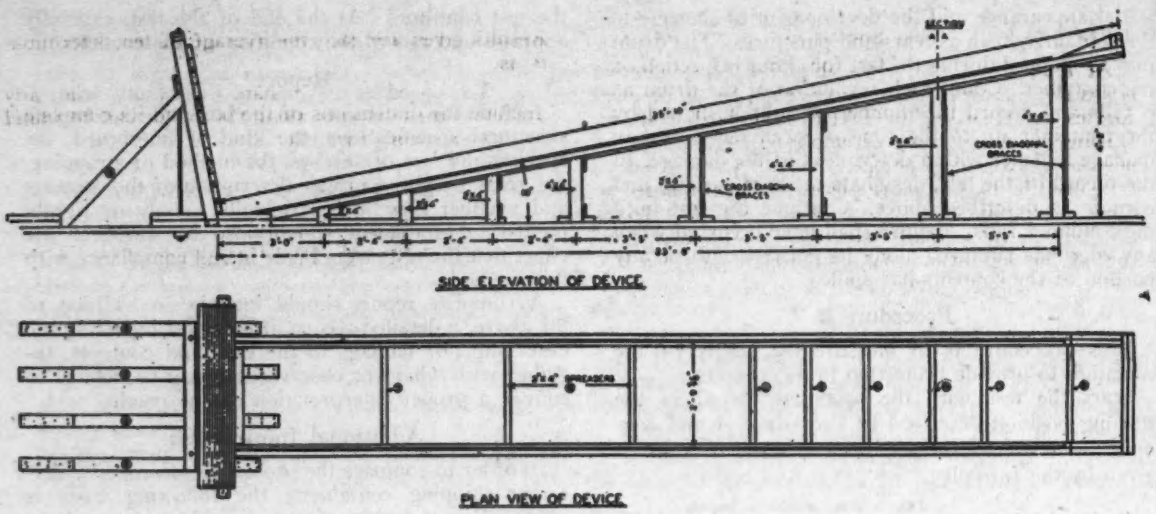


FIG. 1.
Incline Impact Testing Device

Calibration

It is important that the speed of the dolly after traveling from any fixed distance along the plane be constant; and this speed (or the time taken to traverse a distance of 20 feet) shall be checked before the test or at intervals during the test. With the dolly wheels well lubricated, allow the dolly, carrying a box weighing approximately 100 pounds gross, to start from rest at a position near the top of the incline such that the front of the box is 20.0 feet from the bumper, and determine the time required for the box to strike the bumper. Use the average of at least ten such determinations to establish the standard elapsed time of 2.88 seconds under these conditions. If the wheels are insufficiently lubricated, or if any unusual friction is developed, the time will vary widely. If everything is otherwise in order, adjust the slope of the incline until the correct time is obtained.

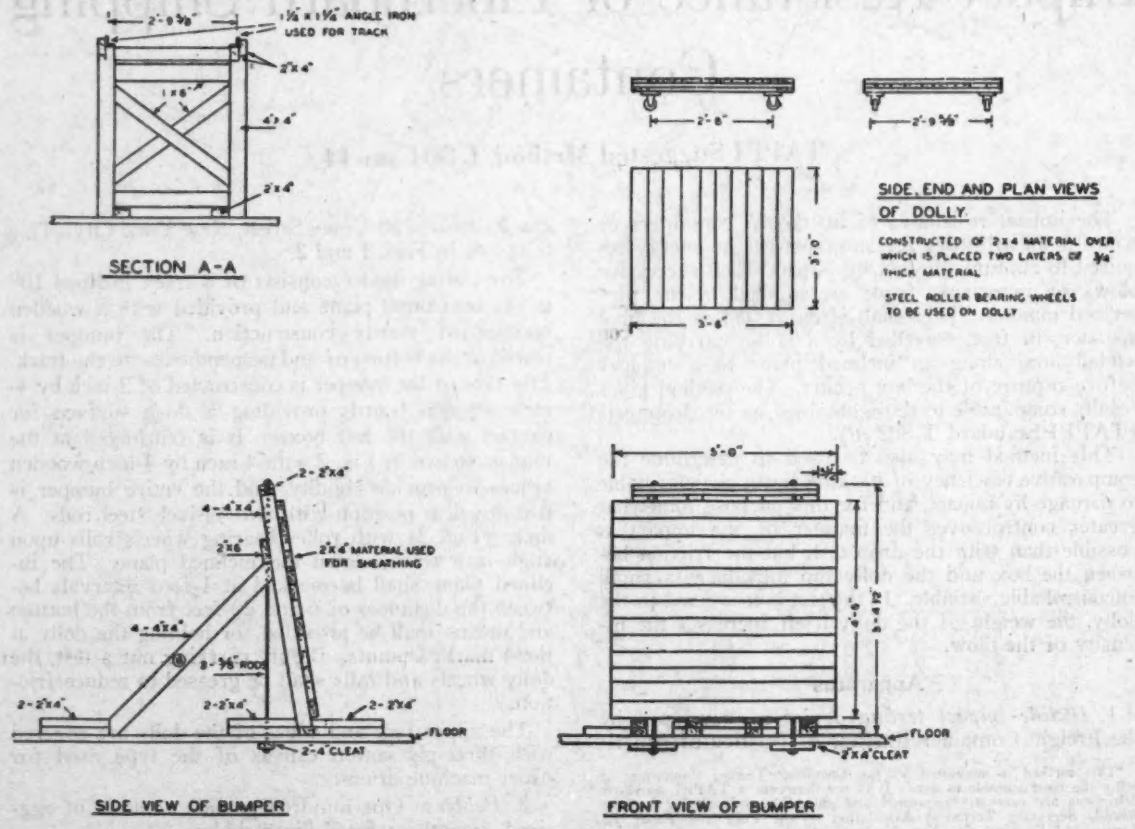

SECTION A-A
SIDE, END AND PLAN VIEWS OF DOLLY.
CONSTRUCTED OF 2 x 4 MATERIAL OVER WHICH IS PLACED TWO LAYERS OF ¾" THICK MATERIAL
STEEL ROLLER BEARING WHEELS TO BE USED ON DOLLY
SIDE VIEW OF BUMPER
FRONT VIEW OF BUMPER
FLOOR
2-4 CLEAT
2"x4" CLEAT

FIG. 2.
Details of Construction of Incline Impact Testing Device

Test Specimen

At least three and preferably five representative boxes shall be tested. The boxes shall be conditioned for testing according to TAPPI Standard T 402 m. During the conditioning of empty boxes, the flaps of one-piece boxes shall be open, and the parts of boxes composed of two or more pieces shall be exposed to the conditioning atmosphere separately. The boxes or their separate parts shall be conditioned until there is no significant change in weight between two successive conditioning periods of 24 hours each. The conditioning atmosphere shall have free access to all surfaces of empty boxes or their component parts, and to all outer surfaces when filled.

For testing, the boxes shall be filled with smooth, egg-size flint pebbles to have the following gross weights:

Size of Box	Gross Weight, pounds
24 — No. 2 can	70 ± 0.3
24 — No. 2½ can	100 ± 0.5
6 — No. 10 can	87.5 ± 0.4

For other sizes of boxes use a weight of pebbles, in pounds, equal to 0.05 times the cubical contents of the box in cubic inches.

The flaps shall be securely closed by stitching or with a suitable adhesive. If an aqueous adhesive is used, additional conditioning for a period of at least 24 hours shall be required before testing.

Procedure

The testing, if possible, shall be performed in an atmosphere conditioned according to TAPPI Standard T 402 m. If the area surrounding the apparatus is not conditioned to 50% relative humidity, the boxes shall be tested immediately after being individually removed from the conditioned atmosphere and this shall be noted in the report.

Place the filled box upon the dolly, resting on its bottom with one end extending 2 inches beyond and parallel to the leading edge. Pull the dolly up so that the leading end of the box is exactly 6 feet from the face of the bumper and then release the dolly. Allow the box to strike the face of the bumper and repeat the impacts successively, increasing the distance traveled along the incline by increments of 1 foot until the container ruptures. After an impact, take care to catch the dolly and box on the rebound, to prevent the box from striking the bumper a second time. Rupture shall consist of any tear or burst completely through the box. Discard any test in which the flaps open because of a failure of the adhesive. Record the final setting in feet along the plane from which the dolly is released which causes final rupture of the specimen (not the cumulative distance covered by the dolly).

Report

Report the average of the final settings in feet along the plane at which rupture occurs and the maximum and the minimum settings. The type and place of failure shall be described for each box. The initial distance up the plane and the conditioning circumstances shall be noted in the report.

Additional Information

1. The speed of the dolly is nearly independent of the load as shown by the following data obtained on one typical tester:

Load on Dolly	Time, seconds	
	10 feet*	20 feet*
None	2.0	2.9
152 pounds	2.0	2.8

*Distance to bumper

Results given are each the average of ten determinations.

2. The speed at the instant of contact from any predetermined distance along the incline can be found by the following formula:

$$S = \frac{2}{t_x}\sqrt{d_x}\sqrt{D}$$

Where S = actual speed at impact;
t_x = measured time to travel a specified distance d_x along plane, determined experimentally;
d_x = the specified distance measured along plane from bumper to leading edge of box;
and D = the actual distance along the plane when dolly is at the release for which it is desired to know the speed at impact, the distance being measured from bumper to leading edge of box.

For a given plane, $\frac{2}{t_x}\sqrt{d_x}$ is a constant.

When the apparatus is propertly calibrated this quantity should equal $\frac{2}{2.88}\sqrt{20}$, which is 3.12.

Thus $S = 3.12\sqrt{D}$.

3. Development of formula:

$S_a = at_a$, where a is the actual acceleration down the plane. Because of friction, a is a little less than g (sin 10°), where g is the vertical acceleration due to gravity; or 32.16 × 0.1736, or 5.6 feet per second per second.

$(S_x)^2 = 2ad_x$; so S_x *also equals* $\sqrt{2ad_x}$.

Equating these two speeds,

$at_x = \sqrt{2ad_x}$, or $a^2t_x^2 = 2ad_x$;

or $at_x^2 = 2d_x$: or $a = \frac{2d_x}{(t_x)^2}$.

Now $S = 2aD$; so, substituting for a,

$$S = \frac{\sqrt{2.2d_xD}}{(t_x)^2} = \frac{2}{t_x}\sqrt{d_x}\sqrt{D},$$ as given in paragraph 2.

The energy per impact in foot pounds is obtained approximately by multiplying the gross weight of the test box plus the dolly in pounds by the equivalent vertical distance dropped in feet, assuming that there is no movement between the box and the surface of the dolly upon impact.

4. From one typical impact tester the following data were obtained:

Distance in feet	Feet per second (S) at impact	Miles per hour at impact	Equivalent vertical drop, feet
1	3.12	2.13	0.15
2	4.42	3.01	0.30
3	5.41	3.69	0.45
4	6.24	4.25	0.60
5	6.98	4.76	0.75
6	7.64	5.21	0.90
7	8.27	5.64	1.05
8	8.84	6.03	1.20
9	9.36	6.38	1.35
10	9.87	6.73	1.50
11	10.36	7.06	1.65
12	10.80	7.36	1.80
13	11.24	7.66	1.95
14	11.68	7.96	2.10
15	12.08	8.24	2.25
16	12.48	8.51	2.40
17	12.82	8.74	2.55
18	13.25	9.03	2.70
19	13.60	9.27	2.85
20	13.92	9.49	3.00

5. The vertical distance, in feet, through which an object has to fall freely to gain a speed of S feet per second, is given by the formula:

$$d = \frac{S^2}{2g} = \frac{S^2}{64.32}.$$

Reference

Freight Container Bureau, Association of American Railroads, "The Conbur Testing Device," F.C.B. *Bulletin* 673, New York (Sept. 15, 1938).

Drop Test for Fiberboard Shipping Containers*

TAPPI Tentative Standard T 802 m-44

This method describes two procedures for making controlled drop tests of fiberboard shipping containers or boxes. Procedure *A* is designed to measure the ability of the container to afford protection to its contents and/or the ability of the container to resist rough handling, while Procedure *B* is a special test designed to measure the ability of the container itself to resist breaking open. These procedures may be used to compare one box with another; to compare one packaging method with another; or to make comparisons with a standard. (See also T 800 sm, Drum Test for Fiberboard Shipping Containers, and T 801 sm, Impact Resistance of Fiberboard Boxes.)

Apparatus

The apparatus shall be a divided tabletop drop tester, constructed substantially as follows: The device, of which one design is shown in Fig. 1, consists of four corner uprights held together and braced by adequate supports, with a trap door top meeting at the center of the top. The uprights may have holes bored with 1-inch centers or provided with suitable clamps to enable the height of the trap door to be adjusted to suit the test. A maximum distance of 48 inches and a minimum distance of 12 inches are required. The trap doors are hinged to the frame and meet flush at the center, and are held horizontally with metal pins or with any other suitable tripping device which will permit the two sections of the top to fall away simultaneously. A plumb bob hangs suspended directly above the center of the table top for use in insuring a direct vertical fall of the box onto a corner or an edge as required. The box is dropped by releasing the trap doors; these fall away, allowing the box to fall directly upon a solid concrete or metal base.

* This method has been approved as a tentative standard by the Container Testing Committee. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York, N. Y.

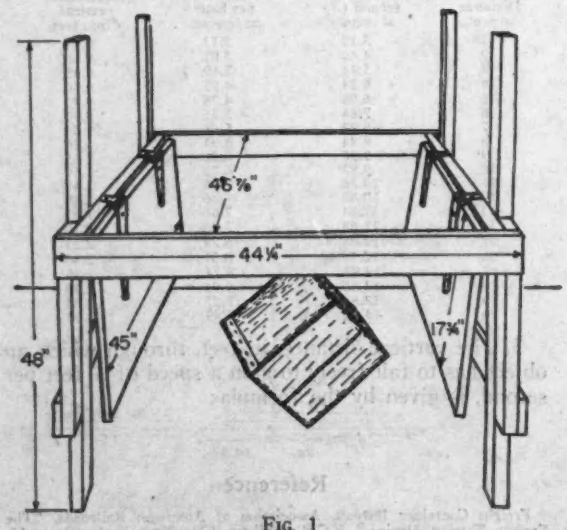


FIG. 1
Drop Test Apparatus
All pieces 2 × 4 inches except top section.

Definitions

IDENTIFICATION OF THE FACES, EDGES, AND CORNERS OF THE BOX

Facing one end (with the manufacturer's joint on the observer's right), the top of the box is designated as 1, the right side as 2, the bottom as 3, and the left side as 4. The near end is designated as 5 and the far end as 6. The edges are identified by the numbers of the two faces which make that edge, as for example, 1-2 identifies the edge where the top and right side meet and 2-5 the edge having the manufacturer's joint. The corners are identified by the numbers of the three faces which meet to form that corner, e.g., 1-2-5 identifies the corner where the top, the right side, and the near end meet.

Test Specimen

When the box is being tested for the protection of the contents, the box shall be packed with the contents designed to be shipped therein. When the box is being tested for its resistance to breaking open, it shall be packed (1) with the contents for which it is designed, or (2) with a designated dummy load, e.g., cans filled with water or with asphalt, as may be specified.

At least three and preferably five representative boxes shall be tested. The boxes shall be conditioned for testing according to TAPPI Standard T 402 m. During the conditioning of empty boxes, the flaps of one-piece boxes shall be open, and the parts of boxes composed of two or more pieces shall be exposed to the conditioning atmosphere separately. The boxes or their separate parts shall be conditioned until there is no significant change in weight between two successive conditioning periods of 24 hours each. The conditioning atmosphere shall have free access to all surfaces of empty boxes or their component parts, and to all outer surfaces when filled.

The flaps shall be securely closed by stitching or with a suitable adhesive. If an aqueous adhesive is used, additional conditioning for a period of at least 24 hours shall be required before testing.

Procedure

HEIGHT OF DROPS

When the box is designed for overseas shipment, the height of the drop shall be such as to develop an energy when the box reaches the floor equal to 100 foot-pounds, except that if the gross weight of the box is outside the limits of 25 and 100 pounds, the maximum and minimum heights shall be 48 and 12 inches, respectively. When the box is designed for

domestic shipment, the height of the fall shall be reduced to equal 50 foot-pounds, with maximum and minimum heights of 48 and 12 inches, respectively.

PROCEDURE A

This procedure is for testing the box and contents for resistance to rough handling.

Before dropping on an edge or corner, balance the box on that corner or edge in the center of the table top, using the plumb bob to indicate the position of the diagonally opposite corner or edge. When to be dropped on a side, place the box symmetrically in the center of the table on that side.

Drop the box in the following sequence:

1. A corner drop on 1-2-5.
2. An edge drop on the shortest edge radiating from the corner (usually 2-5).
3. An edge drop on the next shortest edge radiating from that corner (usually 1-5).
4. An edge drop on the longest edge radiating from that corner (usually 1-2).
5. A flatwise drop on one of the smallest faces (usually end 5 or 6).
6. A flatwise drop on the opposite smallest face.
7. A flatwise drop on one of the medium faces (usually side 2 or 4).
8. A flatwise drop on the opposite medium face.
9. A flatwise drop on one of the largest faces (usually top 1 or bottom 3).
10. A flatwise drop on the opposite large face.

This completes one cycle of ten drops. Commence the next cycle, if required, with a drop on the corner diagonally opposite through the box to the corner on which the first drop was made; on corner 3-4-6. If required, commence a third cycle of ten drops with corner 1-4-5, a fourth cycle with corner 2-3-6, a fifth cycle with corner 2-3-5, a sixth cycle with corner 1-4-6, a seventh cycle with corner 3-4-5, and an eighth cycle with corner 1-2-6.

PROCEDURE B

This procedure is for testing the box, packed with its regular contents or with a dummy load, for measuring its quality of retaining its contents.

Drop the box diagonally onto the corners only, in the following order: 1-2-5, 3-4-6, 1-4-5, 2-3-6, 2-3-5, 1-4-6, 3-4-5, and 1-2-6. These eight corner drops complete one cycle. Continue with additional cycles of drops in the same sequence until a box failure results, the end point being when one edge breaks open for its entire length.

Report

Include the dimensions of the box and its complete structural specifications, the kind of fiberboard, the spacing and size of stitches, the method of strapping, the gross weight, a proper description of the contents and whether they were originally loosely or tightly packed. A statement should also be added to the effect that the tests were made in full compliance with this method, and which procedure was employed.

A complete report should include, in addition to the above, a detailed record of each test including the description of damage to the case and contents, together with whatever observations may be helpful in conveying a correct picture of the results.

Additional Information

1. In order to compare the protection afforded by different shipping containers, the following basis is suggested as a means of assessing the average damage to each can or package:

Damage Rating	Description
0	No appreciable damage.
2	Damage of a noncritical nature.
8	So dented or torn as to be on the verge of leaking.
10	A leaking can or package.

2. If the apparatus described is not available, approximate results for control tests may be obtained as follows: Obtain a table or a support, built up, if necessary, so as to give a level surface at the required height. Balance the box to be tested on the corner or edge on which it is to be dropped, holding the opposite corner or edge loosely so as to position it in balance correctly. Without altering the tilt of the box, lift the box very slightly and slide it off clear from the platform, keeping it at the same elevation as the top of the platform; then allow it to fall onto a solid floor.

The flatwise drops are made by standing the box on the platform and then sliding it off clear and allowing it to fall.

Paper Course at Ocean Falls

R. H. R. Young, resident manager of the Pacific Mills, Ocean Falls, B. C., writes as follows:—

"We have read with interest the item on page 18 of the November 16 issue of the PAPER TRADE JOURNAL concerning the educational programmes being offered by the Pulp and Paper industry.

"In your note at the end of the article you state that there are three courses in pulp and paper manufacture being offered by the industry.

"We believe it might be of interest to you to know that Pacific Mills Limited at Ocean Falls, B. C., also give a course each year in pulp and paper making. This course has been given continuously for some twelve years."

Mr. Young encloses a program for the 1944-1945 session, the second term of which is as follows:

January 9—Motion pictures on pulp and paper making
January 11—Motion pictures on pulp and paper making (2nd part)
January 16—Pulp bleaching lecture
January 18—Trip through bleach plant
January 23—Paper machines and paper making lecture
January 25—Trip through the machine room
January 30—Lecture on technical control, paper grades and the uses of each grade
February 1—Laboratory trip
February 6—Lecture on Programming the paper machines, our markets and the selling of our paper by Frank Wilson
February 8—Trip through our paper warehouse to show our method of handling and storing our paper
February 13—Lecture on paper finishing and converting
February 15—Trip through finishing room
February 20—Lecture on manufacturing costs, profits and cost accounting by Fred Fisher
February 22—A short review lecture on the whole course. Any questions will be answered
February 27—A "True and False" examination
March 1—Lecture on mill management by R. H. R. Young, resident mill manager

Puncture Test of Container Board

TAPPI Tentative Standard T 803 m-44

The puncture test is a measure of the energy required to force a puncture head of designated size and shape completely through a sample of container board. The measured value is dependent upon the resistance to puncture, and the stiffness, of the board. The test may be used satisfactorily in place of a determination of the bursting strength of container board.

Apparatus

The test apparatus (*see* Figs. 1 and 2) shall consist of the following:

1. A pendulum incorporating an arm in the form of an arc of 90°.
2. A puncture point affixed to the end of the rod and having the shape of a right-angle triangular pyramid 1 inch in height.
3. A loose collar around the base of the puncture point to eliminate friction resulting from the punctured material rubbing against the puncture arm.
4. A trigger, or latch, to hold the pendulum in the horizontal position.
5. Two clamping plates for holding the specimen to be tested rigidly in a horizontal plane.
6. A pointer and scale to indicate the arc through which the pendulum travels after penetrating through the specimen.
7. Weights, which when attached, give a maximum scale value of at least 350 inch-pounds of energy when the pendulum is in the horizontal position, and scale graduations corresponding to the weights used.

Note: The factor used to convert inch-pounds of energy to the scale reading on the instrument is 3.774. This is obtained by dividing 16 (which converts the inch-pounds to inch-ounces) by 4.24, which is the theoretical total length of tear made by the puncture point.

8. A loose plate which is inserted between the clamping plates when testing material for the purpose of defining the test area. (This plate must be removed when checking the zero reading of the instrument.)
9. An adjustment screw which bears against the pointer assembly during the measuring half of the pendulum swing, which permits adjustment of the zero position of the pointer.

* This method has been approved as a Tentative Standard by the Container Testing Committee. Criticisms are earnestly requested and should be sent to R. G. Macdonald, Secretary, Technical Association of the Pulp and Paper Industry, 122 E. 42nd St., New York 17, N. Y.

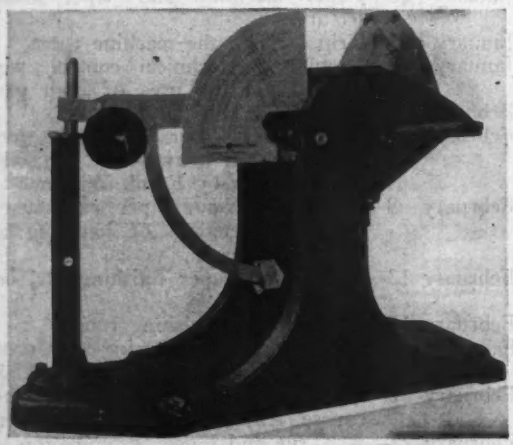


FIG. 1
Photograph of Puncture Tester

ADJUSTMENT

Place the apparatus on a stable platform and level it in both principal directions. The pendulum should now move substantially free of friction. If it does not, then adjust it.

To check the zero reading *it is necessary to remove* the weights, the weight supporting stud, and the metal bearing plate normally inserted between the clamping jaws. (*Failure to remove these may result in damage to the instrument.*) Then proceed as follows: Set the pointer a few graduations above zero. Raise the pendulum to the cocked position and release it. Note the pointer reading. Repeat this operation several times. The pointer should register zero with each trial. If such is not the case, turn the zero adjustment screw (located on the arm extending from the bearing housing of the pendulum) until the zero reading is obtained.

To check the friction of the pointer, set the pointer at zero before releasing the pendulum from the cocked position. After the pendulum has completed its swing, the pointer should not be more than ⅛ inch below the zero position. An error of more than ⅛ inch indicates excessive friction and may be remedied by oiling the pointer bearing or relieving the spring pressure between the pointer collar and the shaft. This pressure is governed by the position of the screw which is threaded into the projection on the pointer collar.

Other points on the scales may be checked if desired by measuring their distance from the zero point according to the mathematical formula:

$$Wg\ (1 - \cos A) = R,$$

where W = total weight of pendulum plus any added weights used,
g = distance of center of gravity of total pendulum mass from center of rotation,
A = angle through which pendulum swings past the vertical, and
R = energy in inch-pounds required to puncture the material tested.

Note: The actual numerical values on the scale are in inch-pounds multiplied by an arbitrary factor of 3.774, so as to make the numerical values for the ordinary grades of boxboard more nearly comparable to the bursting strength of the board.

The loose sleeve is held in place on the base of the puncture point by a pin containing a small ball under spring pressure. The position of this pin in the puncture point base is adjustable and can be locked by means of a set screw. The position of this pin and ball should be such that the loose sleeve is very lightly held on the base of the puncture point, and can be removed with a minimum of effort.

Test Specimen

The specimens for test shall be so selected as to be representative of the lot. They shall be conditioned in accordance with TAPPI Standard T 402 m. The individual specimens shall be of sufficient size so that, during the test, no slippage occurs at the clamping plates. No part of the area of the specimen to be tested shall be nearer than 1.5 inches to any edge, score line, or imperfection in the board.

Procedure

The tests shall be made in the atmospheric conditions prescribed in TAPPI Standard T 402 m. Place the specimen between the clamping plates; then place the loose sleeve against the base of the puncture point and set the pointer about 1 inch above the expected reading. Raise the pendulum to the horizontal position and release it by pushing the latch handle to the left. Note the reading on the appropriate scale (depending on the added weight) after the pendulum has completed its swing, to the nearest half division of the scale used. It is not advisable to make tests giving values within 25% of the high end of the scale. In such cases use a higher scale.

Orient the test specimens so that one half of the specimens are tested with the corrugations of combined corrugated boards, or the machine direction of uncombined sheets, parallel to the plane of the pendulum, and the other half of the specimens at right angles to this direction. Make all the tests from the outside liner of corrugated board and from the smooth side of uncombined board. Make at least five tests each way of the material.

Report

Report the combined average result for both ways of the material. A complete report should also include the number of tests, the average result each way of the material, the combined average, the maximum and minimum values to the nearest unit, and the scale used.

Additional Information

STIFFNESS

A measure of the stiffness of container board, or by difference, a measure of the puncture resis-

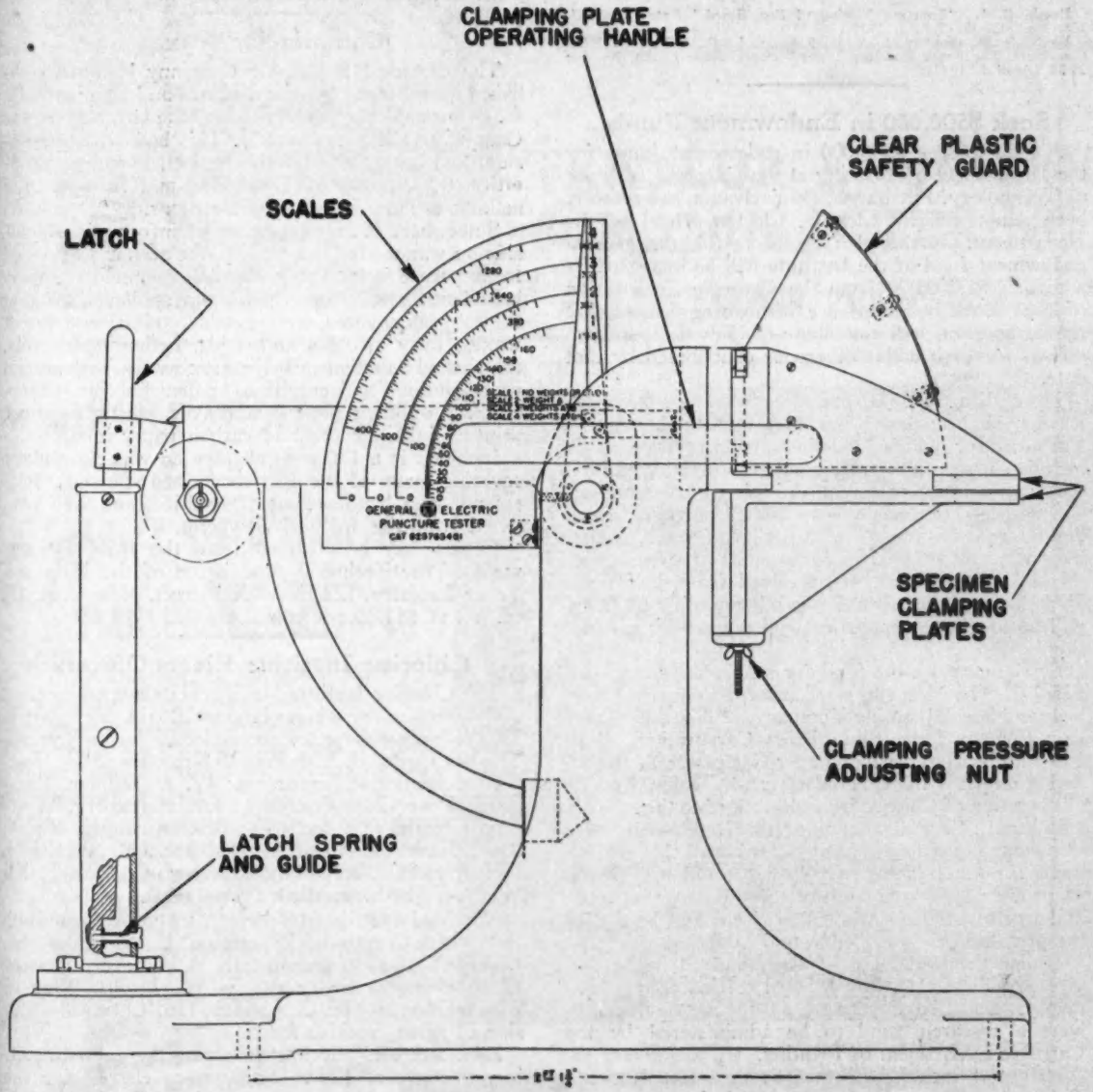


FIG. 2
Details of Puncture Tester

tance not dependent on the stiffness, may be determined as follows:

With a template containing three slits 2.5 inches in length set at 120 angular degrees from each other and meeting at a point, make pencil marks on the specimen and then slit it through these marks with a sharp knife, so that when clamped in position in the instrument the slits will coincide with the three edges of the puncture point. Cut five specimens so that the edge of the puncture point which is in the plane of the curved puncture arm is parallel to the corrugations, or machine direction, and cut five others with this edge perpendicular to the corrugations, or machine direction. Make the cuts completely through the sheet and so that they meet completely at the center point. Using an appropriate scale on the instrument, measure the resistance of the slit specimens to penetration of the puncture point.

References

Beach, R. L., "Puncture Testing of Box Board," *Paper Trade J.* 108, No. 5:30-35 (Feb. 2, 1939).
Wells, S. D., Kaplan, A. B., and Ayers, L. R., "Tests on Fiber Containers. The Beach Puncture Tester," *Paper Trade J.* 116, No. 13: 29-38 (April 1, 1943).

Seek $500,000 in Endowment Funds

A plan to seek $500,000 in endowment funds for the Department of Printing at the Carnegie Institute of Technology, Pittsburgh, Pennsylvania, has recently been announced by Glen U. Cleeton, Head of the Department. If the plan is successful, the general endowment fund of the Institute will be increased by a gift of $1,000,000 from the Carnegie Corporation of New York in accordance with an agreement that the corporation will contribute on July 1, 1946, two dollars for each dollar otherwise contributed by that date.

More than $150,000 has already been subscribed, leaving slightly less than $350,000 to be raised. Purposes for which contributions have been made include support of a professorship in printing, tuition scholarships, and research. Additional contributions will be accepted for these and other purposes which donors may specify. Over a period of years, contributions totaling $125,000 for support of a professorship in printing have been received from the United Typothetae of America. From other sources $100,000 will be sought to supplement endowment for instruction.

On January 15, the fund for scholarships exceeded $25,000. The Mergenthaler Linotype Company; Herbick and Held Printing Company, William G. Johnston Company, the Eddy Press Corporation, all of Pittsburgh; Hammermill Paper Company; S. Rosenthal Company of Cincinnati; and Traffic Service Corporation of Chicago have subscribed to the scholarship fund. Several alumni of the Department have also contributed to the fund. It is hoped that endowment for scholarships may be increased by $50,000 to provide income to defray tuition costs of needy and worthy students who otherwise might be denied the privilege of college education in the graphic arts.

Under the leadership of Raymond Blattenberger, vice president of Edward Stern & Co., four Philadelphia firms have recently made contributions to start a research fund to be administered by the Carnegie Department of Printing. Up to January 15, contributors included Edward Stern & Co., National Publishing Company, Franklin Printing Company, and the Wilcox-Walter-Furlong Paper Company. The type of research to be undertaken will relate to problems of printing production and management. Results of investigations will be made available to the industry without restriction. The goal for research contributions to be sought before the Carnegie Corporation 1946 deadline is $200,000.

In announcing the plan, Professor Cleeton stated that the service rendered the printing industry by Carnegie Tech in providing professional education in the graphic arts since 1913 is the basis of the present appeal for financial support. This service, he stated, will continue regardless of the response from printers, publishers, equipment manufacturers, and suppliers. However, with added funds, the service can be expanded and made more effective, particularly in the field of research.

Committees composed of former students of the Department of Printing and other representatives of the printing industry are being formed in each city. These committees will work in cooperation with the Tech Printers' Alumni organization.

Commercial Waxes

The Chemical Publishing Company has just published Commercial Waxes, Natural and Synthetic, by H. Bennett, Technical Director of the Glyco Products Company (581 pp. 6″ x 8″). This book is a symposium and compilation of the subject, including properties, uses, methods of handling and formulas for making commercial wax compositions.

Since there is no one source of information available on waxes used in industry, the author was asked to prepare this book for chemists, engineers, superintendents, purchasing agents and students. Among the subjects covered are vegetable, animal and insect waxes, fatty alcohols and acids, hydrogenated oils, chlorinated naphthalenes, synthetic waxes, commercial wax solutions and emulsions, paper finishes, waterproofing of kraft papers, adhesives, plastic molding, printing inks, stencils and carbon paper inks.

Included is a 150-page chapter on wax formulary covering many of the aforementioned subjects. It is essentially a handbook on the subject and well prepared from the practical viewpoint.

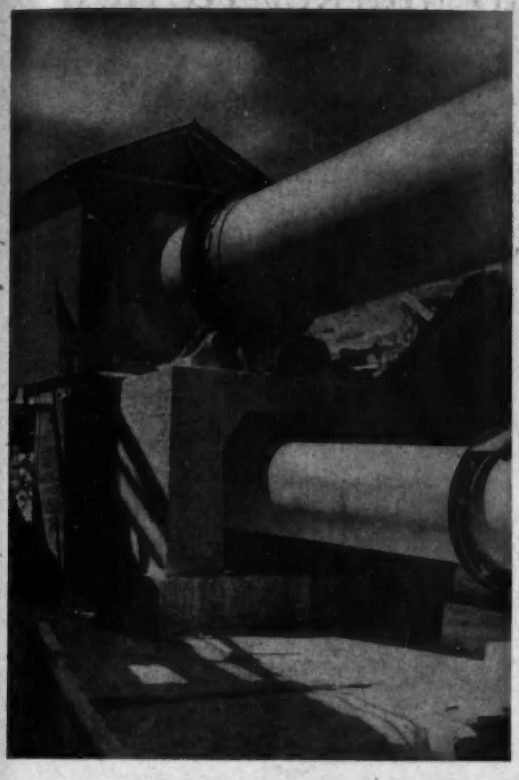
Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry, 122 East 42nd street, New York 17, N. Y., at $11.00 per copy.

Chlorine Institute Elects Officers

The Chlorine Institute, Inc., held its annual meeting and directors' meetings January 26 in New York. The following directors were elected for two years: Thomas Coyle, E. I. duPont deNemours & Co., Inc., Electrochemicals Department; W. I. Galliher, Pittsburgh Plate Glass Company; Louis Neuberg, Westvaco Chlorine Products Corporation; E. E. Routh, The Mathieson Alkali Works, Inc.; B. P. Steele, Pennsylvania Salt Manufacturing Company; Eli Winkler, Southern Alkali Corporation.

The hold-over directors are: George M. Dunning, Wyandotte Chemicals Corporation; F. W. Fraley, Jr., Diamond Alkali Company; R. W. Hooker, Hooker Electrochemical Company; S. W. Jacobs, Niagara Alkali Company; E. C. Speiden, Isco Chemical Division of Innis, Speiden & Co.

At a directors' meeting following the annual meeting, the officers shown below were elected for the year 1945: S. W. Jacobs, president; E. C. Speiden, vice president; Robert T. Baldwin, secretary and treasurer.



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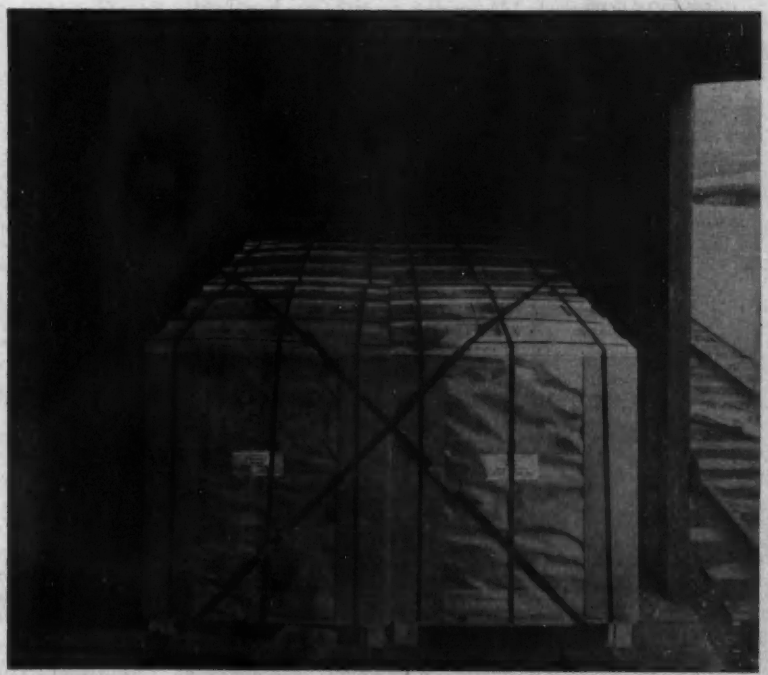

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PROMPT SHIPMENTS To War Production Plants

THE STANLEY WORKS STEEL STRAPPING DIVISION NEW BRITAIN, CONNECTICUT

New York Paper and Pulp Market Review

Government May Require More Paper In Cut Sizes In 1945—Pulpwood Receipts Total 14,818,900 Cords In 1944—Pulp Allocations About Equal To Last Year—Waste Paper Collections Are Lower.

Office of the PAPER TRADE JOURNAL,
Wednesday, January 31, 1945.

Demand for all major types of paper continues in excess of supply. The prospect for the first half of 1945 is not expected to bring any material improvement in the civilian supply situation. This tight civilian supply condition is not expected by government agencies to be substantially relieved until the war in Europe ends. Many reports indicated that the all-over government requirements for this year will be above 1944 in some types of paper, such as mimeograph, No. 1 and No. 2 sulphite bonds, blueprint, waterproof, greaseproof, and in newsprint.

Paper production for the week ended January 20 was estimated at 89.0%, compared with 86.1% for 1944, with 87.9% for 1943, with 105.0% for 1942, and with 87.9% for the corresponding week in 1942.

Paper board production for the week ended January 20 was 94.0%, compared with 93.0% for 1944, with 88.0% for 1943, with 101.0% for 1942, and with 78.0% for the corresponding week in 1941.

Sales of paper by wholesalers for November, the Department of Commerce reports, showed a normal seasonal decline of 6% under October, bringing the index to 152.3. Inventories showed a normal decline of 3% under October, bringing the index to 95.8.

Pulpwood

Pulpwood receipts at mills in 1944 reached a total of 14,818,900 cords. December receipts by Northeast mills was 23% above 1943; in the Appalachian region, 43% above last year; in the Lake States 22% below last year, and in the South, 17% below 1943.

Wood Pulp

Wood pulp allocations for the current quarter follow policies used in 1944. Bleached sulphite produced in integrated and semi-integrated mills are directed to withhold and ship market pulp in amount equivalent to 15% of their estimated first quarter production, unless such mills authorized to produce certain types of paper are thereby authorized to use more than 85% of their estimated wood pulp.

Rags

Mill demand for new cotton cuttings is in excess of supply in all grades. Collections of No. 1 white shirt cutting and unbleached cuttings are reported as gradually deteriorating. Prices are strong at ceiling levels.

Demand for old cotton rags is reported as showing a little improvement this week, with more activity expected in the near future. Roofing mills are now indicated more interest in accumulating inventories. Old whites continue in active demand, with blues and thirds picking up. Prices are firm at ceiling levels.

Old Rope and Bagging

Mill demand for good Manila rope continues urgent and only partially filled. Other fibers are in good demand. Prices are firm at ceiling levels.

No substantial improvement in buying has been reported in scrap bagging to date. Purchasing is on a very limited scale, prices are soft and continue nominal.

Old Waste Paper

Mill demand for waste paper continues urgent. Unfavorable weather conditions in the metropolitan area and in other regions in the country has forced collections down. Current demand is reported as increasing the margin over supplies. Prices are strong at ceiling levels.

Twine

Demand for the best grades of available twine continues active. Prices are firm and no important change has been reported in this market during the current week.

To Resume Newsprint Discussion

Discussion is to be resumed soon between a committee of United States newspaper publishers and representatives of the Canadian newsprint manufacturers on the possibility of using 30-pound newsprint.

A message from Charles Vining, President of the Newsprint Association of Canada to W. G. Chandler, Scripps-Howard executive, who was chairman of the committee of United States publishers which conferred with the Canadians last June on 30-pound newsprint, said the Canadian manufacturers would be glad to examine the question again so as to have conclusions before next July when the latter half of the year starts.

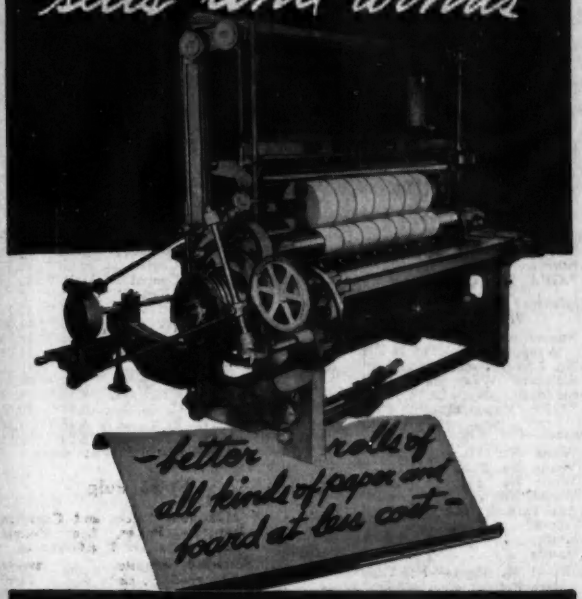
Mr. Vining emphasized that there should be no misunderstanding or undue optimism either among publishers or manufacturers because of opening up the subject again. He said that the Canadian wood supply and operating conditions for the first five months of 1945 are already fixed and were included in the discussion last June. He emphasized that the situation for the second half of 1945 may be changed by the amount and distribution of new wood which will begin to reach the mills in June with data on this available next May. He said that at present there is no indication that the new wood supply is likely to bring conclusions any different from conclusions mutually reached last June. Further, Mr. Vining said, no solution has been found as far as the Canadian manufacturers know of the major problem of equitable distribution of mixed weights of 30 and 32 pounds.

The message reiterated the readiness of Canadian manufacturers to supply 30 lb. newsprint if a study shows this to be desirable.

Colonel J. Hale Steinman, Director of the WPB Printing and Publishing Division, has asked the same newspaper executives to serve again in the conferences. They are W. G. Chandler, Scripps-Howard Newspapers, New York City; F. M. Flynn, New York Daily News; Harry M. Bitner, Pittsburgh Sun-Telegraph; Robert B. Choate, Boston Herald Traveler; Herbert Ponting, Detroit News; Earl McCollum, Kansas City Star; Franklin D. Schurz, South Bend (Ind.) Tribune; Buell W. Hudson, Woonsocket (R. I.) Call; Irwin Maier, Milwaukee (Wis.) Journal; Harry S. Webster, San Bernardino (Cal.) Sun Telegram.

CAMACHINE 9-5

slits and winds



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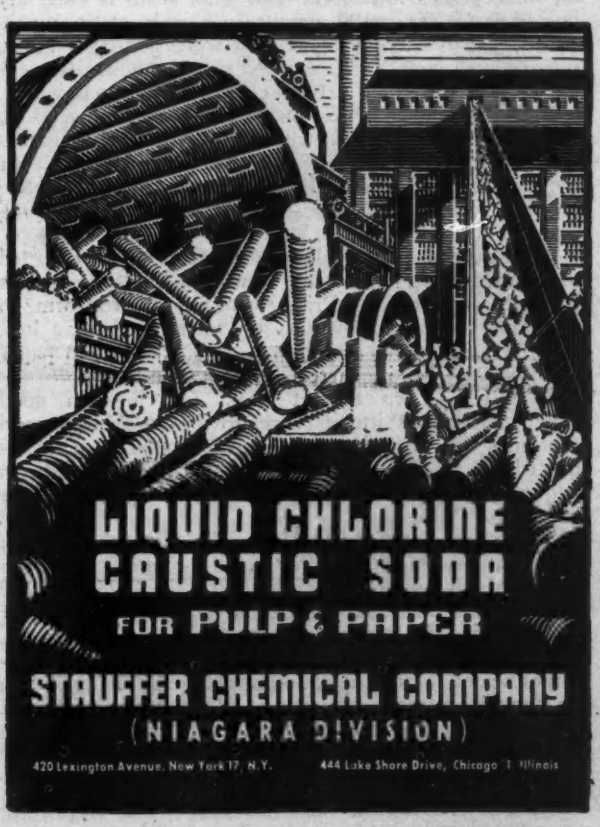
FOR PAPER MILLS



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FOR PULP & PAPER

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(NIAGARA DIVISION)

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MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, January 31, 1945.

BLANC FIXE—Prices on blanc fixe continue to conform to prevailing levels. Demand is reported fair. The pulp is quoted at $40 per ton, in barrels, at works. The powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—All-over demand is reported heavy. Production is high and civilian demand is reported in excess of stocks. Quotations are unchanged. Bleaching powder is currently quoted at from $2.50 to $3.10 per 100 pounds. All prices in drums, car lot, f.o.b. works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound f.o.b. shipping point.

CAUSTIC SODA—Demand very heavy. Production good, but under demand. Market continues tight. Prices unchanged. The flake form is currently scarce. Solid caustic soda is currently quoted at $2.30 per 100 pounds. The flake and ground are currently quoted at $2.70 per 100 pounds. All prices in drums, car lots, f.o.b. works.

CHINA CLAY—Current demand is reported moderate on many grades of china clay. Quotations unchanged. Domestic filler clay is quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mines. Imported china clay is currently quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Military and all essential requirements heavy with market reported tight at this date. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b. works.

ROSIN—The rosin market reports prices unchanged on some grades this week. "G" gum rosin is currently quoted at $5.79 per 100 pounds, in barrels, at Savannah. "FF" rosin is currently quoted at $5.75 per 100 pounds, in barrels, at New York. Seventy per cent gum rosin size is currently quoted at $6.06 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake continue to be reported unchanged. Demand fair during the current week. Domestic salt cake is currently quoted at $15 per ton, in bulk. Chrome cake is currently quoted at $16 per ton. All quoted prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand for soda ash is reported to absorb current production. Market is tight. Shipments delayed by weather. Prices continue to conform to prevailing levels. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Corn market firm. Offerings in good volume and supply situation is reported favorable. Demand continues heavy. Prices unchanged on starch. Pearl is quoted at $3.72 per 100 pounds. Powdered starch is quoted at $3.83 per 100 pounds. All prices in bags, car lots f.o.b. Chicago.

SULPHATE OF ALUMINA—Demand good. Supply situation is satisfactory. Prices of the commercial grades are currently quoted at from $1.15 to $1.25 per 100 pounds. The iron free is currently quoted at $1.85 per 100 pounds. All prices in bags, car lots, f.o.b. works.

SULPHUR—Current consumption of sulphur continues heavy. Market situation unchanged. The quotation on annual contracts continues at $16 per long ton, f.o.b. mines. The current price on contracts at Gulf Ports is $17.50 per long ton.

TALC—Demand reported good. Domestic grades are currently quoted at from $16 to $21 per ton at works.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—	
Roll, contract... *$58.00 @	—
Sheets ..... 66.00 "	—
* OPA Maximum Price.	
Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill	
Superstandard Wrapping ....*$5.25 @	—
No. 1 Wrapping... *5.00 "	—
Standard Wrapping*4.75 "	—
Standard Bag.....*4.375 "	—
* OPA Manufacturers' Prices.	
Tissues—Per Ream—Carlots	
White No. 1..... 1.12½ "	—
White No. 1 M. G. 1.10 "	—
White No. 1½.... 1.00 "	—
White No. 2..... .90 "	—
Anti-Tarnish M.F.. 1.20 "	—
Colored ..... — "	—
Kraft ..... .95 "	—
Manila ..... .90 "	—
Toilet—1 M. Sheets—Per Case	
Unbleached ..... 4.25 "	—
Bleached ..... 5.70 "	—
Unbl. Toilet, 1 M. 4.16 "	—
Bleached Toilet.... 5.70 "	—
Paper Towels, Per Case—	
Unbleached, Jr..... 2.20 "	—
Bleached, Jr. ..... 3.20 "	—
Manila—per cwt.—C. l. f. a.	
No. 1 Jute.....11.25 @	—
No. 1 Manila Wrapping, 35 lb..... 6.00 "	6.25
No. 2 Manila Wrapping, 35 lb..... 5.75 "	6.00
Boards, per ton—	
News .....*50.00 @	—
Chip .....*50.00 "	—
Sgl. Mla. Lt. Chip *62.00 "	—
White Pat. Coated*75.00 "	—
Kraft Liners 50 lb.*63.00 "	—
Binders Boards... 84.00 "	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$39.10 @ $46.00	$40.25 @ $47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1..	$10.55 @ $12.75	$11.70 @ $14.25
No. 2..	9.65 " 11.75	10.80 " 13.25
No. 3..	9.20 " 11.25	10.35 " 12.50
No. 4..	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated...	$13.65 @ $15.5
No. 2 Glossy Coated...	12.40 " 14.0
No. 3 Glossy Coated...	11.60 " 13.2
No. 4 Glossy Coated...	11.15 " 12.7
No. 1 Antique (watermarked)	10.25 " 11.7
No. 2 Offset	9.60 " 11.0
A Grade E. F.....	9.35 " 10.7
A Grade S. & S. C...	9.60 " 11.0
B Grade E. F.	8.85 " 10.2
B Grade S. C.	9.10 " 10.5
C Grade E. F.	8.55 " 9.7
C Grade S. C.	8.80 " 10.0
D Grade E. F.	8.25 " 9.5
D Grade S. & S. C. ..	8.50 " 9.7

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight Not Exceeding OPA Allowances.

Bl. Softwood Sulphite.....	$86.00
Unbl. Softwood Sulphite.....	74.00
Bl. Hardwood Sulphite.....	83.50
Unbl. Hardwood Sulphite.....	71.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich ..72.00 @	82.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate...	82.00
S. Semi Bleached Sulphate...	75.00
N. Unbl. Sulphate.....	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	76.00
Unbl. Soda	72.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area).....	10.50
West Coast (out area).....	16.50

	50%-80% Air Dry Weight
Northeast	11.50
Lake Central	11.50
Southern	14.00
West Coast (in area).....	9.50
West Coast (out area).....	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—	
New White, No. 1.. 6.50 @	7.25*
Silesias No. 1..... — "	5.75*
New Unbleached... 6.75 "	7.50*
Blue Overall ..... — "	5.50*
Fancy ..... — "	3.50*
Washables ..... — "	3.00*
Bleached Khaki Cuttings ..... — "	4.25*
Unbleached Khaki Cuttings ..... — "	3.50*

* OPA Maximum Prices.

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tub-sizings from starch

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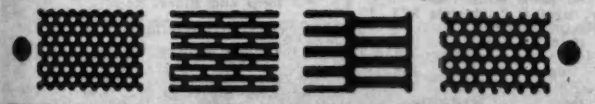

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THE CORROSION RESISTANT ALLOY
CAST • ROLLED • FABRICATED
for all equipment exposed to corrosion by sulphite acids
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Old Rags

White, No. 1—		
Repacked	*1.80	—
Miscellaneous	*1.20	—
White, No. 2—		
Repacked	*2.90	—
Miscellaneous	*2.65	—
Third and Blues—		
Repacked	*2.20	—
Miscellaneous	*1.80	—
Roofing Rags—		
No. 1	*1.55	—
No. 2	*1.45	—
No. 3 (bagging)	*1.35	—
No. 4	*1.35	—
No. 5A	*1.35	—
Old Manila Rope	5.75	—

OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	2.40
New Mixed Cuttings	2.00	2.20
New Light Silesias	5.50	5.75
Light Flannelettes	5.50	5.75
New White Cuttings	7.00	7.50
New Light Oxfords	4.00	4.50
New Light Prints	3.00	3.25

Old Rags

No. 1 White Linens	7.50	8.50
No. 2 White Linens	6.50	7.50
No. 3 White Linens	4.50	—
No. 4 White Linens	2.25	3.25
No. 1 White Cotton	4.25	4.75
No. 2 White Cotton	3.25	3.75
No. 3 White Cotton	2.50	3.00
No. 4 White Cotton	1.90	2.20
Extra Light Prints	2.00	2.40
Ord. Light Prints	1.75	2.15
Med. Light Prints	1.55	1.95
Dutch Blue Cottons	2.25	2.50
French Blue Linens	3.00	—
Checks and Blues	2.00	—
Linsey Garments	1.90	2.00
Dark Cottons	1.50	1.60
Old Shopperies	1.30	1.45
New Shopperies	1.45	1.50
French Blues	2.25	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—		
Foreign	Nominal	
Domestic	4.25	4.35
Wool Tares, light	4.25	4.50
Wool Tares heavy	4.50	5.00
Bright Bagging	4.50	4.85
Manila Rope—		
Foreign	—	—
Domestic	*5.75	—
Jute Threads	5.50	—
No. 1 Sisal Strings	*4.00	—
Mixed Strings	2.00	—

*OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	—
No. 1 Hard White Envelope Cuts	3.12½	—
No. 1 Hard White Shavings, unruled	2.87½	—
No. 1 Hard White Shavings, ruled	2.50	—
Soft White Shavings, one cut	2.87½	—
No. 1 Soft White Shavings	2.50	—
Soft White Shavings, Misc.	2.15	—
No. 1 Fly Leaf Shavings	1.67½	—
No. 2 Fly Leaf Shavings	1.12½	—
No. 1 Groundwood Fly Leaf Shavings	1.25	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	—
Mixed Colored Shavings	.75	—
Mixed Groundwood Colored Shavings	.90	—
Overissue Magazines	1.67½	—
No. 1 Heavy Books & Magazines	1.92½	—
Mixed Books	1.10	—
No. 1 White Ledger	2.30	—
No. 2 Mixed Ledger, colored	2.00	—
New Manila Envelope Cuttings, one cut	2.87½	—
New Manila Envelope Cuttings	2.65	—
Extra Manilas	1.95	—
Mixed Kraft, Env. & Bag Cuttings	2.75	—
Kraft Envelope Cuttings	3.25	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	—
New 100% Kraft Corrugated Cuttings	2.25	—
No. 1 Assorted Old Kraft	1.75	—
New Jute Corrugated Cuttings	.90	—
Old 100% Kraft Corrugated Containers	1.75	—
Old Corrugated Containers	1.40	—
Box Board Cuttings	.72½	—
White Blank News	1.65	—
Overissue News	1.10	—
No. 1 News	1.00	—
No. 1 Mixed Paper	.95	—
Old Corrugated Containers	.82½	—
Mill Wrappers	1.10	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—		
India	.21	—
White Hemp	.21	—
Fine Polished—		
Fine India	.36	—
Unpolished—		
Box	.17½	—
Paper Makers	.17	—
Tube Rope	.19	—
Wall Paper	.20½	—
Wrapping	.23	—
Soft Fiber Rope	.19	—
Cotton	.25	—

(Hard Fiber)

Medium Java	.18	—
Mex. Sisal	.16	—
Manila	—	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill.)

Shirt Cuttings—	
New White No. 1	.07¾
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¾
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¾
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¾
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¾

Domestic Rags (Old)

White No. 1 — Repacked	1.80	—
Miscellaneous No. 1	1.20	—
Miscellaneous No. 2	1.65	—
White No. 2 — Repacked	2.90	—
Thirds and Blues—		
Miscellaneous	1.80	—
Repacked	2.20	—
Black Stockings—		
(Export)	Nominal	
Roofing Stock—		
Foreign No. 1	Nominal	
Domestic No. 1	1.55	—
Domestic No. 2	1.45	—
Roofing Bagging	1.35	—
Old Manila Rope	5.75	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—		
Foreign	Nominal	
Domestic	3.00	3.50
No. 1 Clean bright—		
Sisal Strings		.84
No. 2 Clean bright—		
Sisal Strings		.88
Sisal Jute	.02½	.02¾
Scrap—		
No. 1	1.25	1.30
No. 2	1.75	1.80
Wool Tares hvy	4.00	4.75
No. 1 New Light Burlap	3.00	4.00
New Burlap Cuttings	3.75	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices, Baled

No. 1 Hard White Envelope Cuts, one cut	3.37½	—
No. 1 Hard White Shavings, unruled	2.87½	—
Soft White Shavings, one cut	2.50	—
White Blank News	1.65	—
Soft White Shavings, Misc.	2.15	—
No. 1 Fly Leaf Shavings	1.67½	—
No. 2 Fly Leaf Shavings	1.12½	—
No. 1 Groundwood Fly Leaf Shavings	1.25	—
No. 2 Groundwood Fly Leaf Shavings	.90	—
Mixed Colored Shavings	.75	—
New Manila Envelope Cuts, one cut	2.87½	—
Hard White Envelope Cuts, one cut	3.37½	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	—
Mixed Kraft Env. & Bag Cuttings	2.75	—
Kraft Envelope Cuttings	3.25	—
No. 1 Heavy Books & Magazines	1.92½	—
New Manila Envelope Cuts, one cut	2.87½	—
New Manila Envelope Cuttings	2.65	—
White and Colored Tabulating Cards	2.25	—
Ground Wood Tabulating Cards	1.35	—
White Blank News	1.65	—
No. 1 Assorted Old Kraft	1.75	—
No. 1 Mixed Paper	.95	—
Overissue News	1.10	—
Box Board Cuttings	.72½	—
New Corrugated Cuttings, Kraft	2.25	—
Old 100% Kraft Corrugated Containers	1.75	—
Old Corrugated Containers	1.40	—
Jute Corrugated Cuttings	1.07½	—

Bagging

(F. o. b. Boston)

Gunny Bagging—		
Foreign	(nominal)	
Domestic	—	2.50
Sisal Rope No. 1	*4.75	—
Sisal Rope No. 2	*4.25	—
Mixed Rope	—	1.35
Transmission Rope—		
Foreign	(nominal)	
Domestic	2.75	3.00
Manila Rope—		
Foreign	(nominal)	
Domestic	5.75	—
Soft Jute Rope	5.25	—
Jute Car Threads	3.00	3.50
Bleachery Burlap	8.50	9.00
Scrap Burlap—		
Foreign	(nominal)	
Domestic	—	2.75
South American	—	3.00

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices, Baled

No. 1 Hard White Shavings, unruled	2.87½	—
No. 1 Hard White Shavings, ruled	2.50	—
Soft White Shavings, Misc.	2.15	—
No. 1 Fly Leaf Shavings	1.67½	—
No. 2 Fly Leaf Shavings	1.12½	—
No. 1 Groundwood Fly Leaf Shavings	1.25	—
No. 2 Groundwood Fly Leaf Shavings	.90	—
Mixed Colored Shavings	.75	—
New Manila Envelope Cuts, one cut	2.87½	—
Hard White Envelope Cuts, one cut	3.37½	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	—
Mixed Kraft Env. & Bag Cuttings	2.75	—
Kraft Envelope Cuttings	3.25	—
No. 1 Heavy Books & Magazines	1.92½	—
New Manila Envelope Cuts, one cut	2.87½	—
New Manila Envelope Cuttings	2.65	—
White and Colored Tabulating Cards	2.25	—
Ground Wood Tabulating Cards	1.35	—
White Blank News	1.65	—
No. 1 Assorted Old Kraft	1.75	—
No. 1 Mixed Paper	.95	—
Overissue News	1.10	—
Box Board Cuttings	.72½	—
New Corrugated Cuttings, Kraft	2.25	—
Old 100% Kraft Corrugated Containers	1.75	—
Old Corrugated Containers	1.40	—
Jute Corrugated Cuttings	1.07½	—

Bagging

(F. o. b. Boston)

Gunny Bagging—		
Foreign	(nominal)	
Domestic	—	2.50
Sisal Rope No. 1	*4.75	—
Sisal Rope No. 2	*4.25	—
Mixed Rope	—	1.35
Transmission Rope—		
Foreign	(nominal)	
Domestic	2.75	3.00
Manila Rope—		
Foreign	(nominal)	
Domestic	5.75	—
Soft Jute Rope	5.25	—
Jute Car Threads	3.00	3.50
Bleachery Burlap	8.50	9.00
Scrap Burlap—		
Foreign	(nominal)	
Domestic	—	2.75
South American	—	3.00
Wool Tares—		
Foreign	(nominal)	
Domestic	4.25	—
Aust. Wool Pouches	—	3.00
New Zealand Wool Pouches	—	2.50
New Burlap Cuttings	4.75	5.00
Heavy Baling Bagging	4.00	4.25
Paper Mill Bagging	2.50	2.60
No. 2 Roofing Bagging	1.35	—

*OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—		
New Light Prints	.04½	.04½
Fancy Percales	.04¾	.05
New White No 1	.06¾	.07
New Light Flannelettes	.05¾	.06
Canton Flannels, Bleached	.06	.06½
Underwear Cutters, Bleached	.06¾	.06½
Underwear Cutters, Unbleached	.05¾	.06
Silesias No. 1	.06	.06½
New Black Silesias	.03	.03½
Red Cotton Cuttings	.03¾	.04
Soft Unbleached	.06½	.06½
Blue Cheviots	.05¾	.06
Fancy	.02¾	—
Washable	.02¾	—
Khaki Cuttings	.02¾	.03
O. D. Khaki	.03½	.03½
Corduroy	.03¾	.03½
New Canvas	.06¼	.06½
U. V. D. Cuttings	.06¼	.06½

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—		
Repacked	3.80	—
Miscellaneous	3.20	—
White No. 2—		
Miscellaneous	2.65	—
Twos and Blues, Repacked	2.20	—
Old Blue Overalls	2.25	2.30
Thirds and Blues, Repacked	2.20	—
Miscellaneous	1.80	—
Black Stockings	3.50	4.00
Roofing Stock—		
No. 1	1.55	—
No. 2	1.45	—
No. 3	1.35	—
No. 4	1.35	—
No. 5, Quality A	1.35	—
Quality B	1.20	—
Quality C	.95	—
Old Manila Rope	5.75	—

*OPA Maximum Prices.

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)
Misc.	2.15
No. 1 White Ledger	2.30
No. 2 Ledger, colored	2.00
No. 1 Heavy Books & Magazines	1.92½
Overissue Magazines	1.67½
New Manila Envelope Cuttings	2.65
No. 1 Assorted Old Kraft	1.75
No. 1 Mixed Paper	.95
Box Board Cuttings	.72½
Kraft Corrugated Cuttings	2.25
Old Corrugated Containers	1.40
Overissue News	1.00
No. 1 News	1.00

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices, Baled

Shavings—		
No. 1 Hard White Envelope Cuts, one cut	3.37½	—
No. 1 Hard White Shavings, unruled	2.87½	—
No. 1 Soft White Shavings	2.50	—
No. 1 White Ledger	2.30	—
No. 1 Heavy Books & Magazines	1.92½	—
White Blank News	1.65	—
Mixed Kraft Env. & Bag Cuttings	2.75	—
No. 1 Assorted Old Kraft	1.75	—
Overissue News	1.10	—
No. 1 News	1.00	—
No. 1 Mixed Paper	.95	—
No. 1 Roofing Rags	1.55	—
No. 1 Roofing Bags	1.45	—

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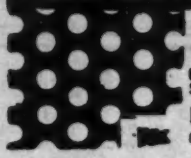
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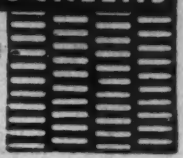

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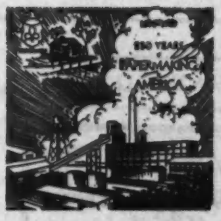

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2—36" x 44" face—with frames and bearings.
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1—16" diameter x 84" face. (Baby).
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1—28" two roll Embossing Calender.

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1—Jeffrey swing hammer type shredder—size 24" x 18"—antifriction bearing equipped.
1—#25 CRSE Mitts & Merrill Hog.
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1—103" Hamblet Single Knife Sheeter—complete with Slitting Device and Drive.
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1—114" Two drum Langston Slitter & Winder.
1—110" Beloit slitter (slitter attachment only) excellent condition.
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2—Brass Suction Boxes—85" long x 8½" wide.

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F-1

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WANTED—MASTER MECHANIC

Paper mill in Northern New York State, manufacturing toilet and facial tissues, has position open as Master Mechanic. Experience on Yankee Fourdrinier Machines and roll toilet paper converting equipment necessary. Should have knowledge of engineering. Excellent future for a good man. Please furnish complete job qualifications. Address Box 45-68 care Paper Trade Journal. F-15

HOW MANY BEATERS DO YOU THINK THIS ONE REPLACED?

Dilts hydrapulpers, most revolutionary development that ever hit the stock preparation trail, will start moving into the mills as fast as material and labor become available. That is because hydrapulpers:

Take virgin pulp in laps, bales, rolls.

Take baled papers — cut wires and heave it in. Pulps at breath-taking speed.

Pulps thoroughly and uniformly.

Provide automatic removal of all light or heavy foreign material.

Are built for batch or continuous operation as required.

Come in full range of capacities, a size to suit any mill requirement.

Sharply reduce need of supervision— particularly when fed by stock conveyor.

Make possible very substantial saving in floor space due to beater elimination.

Are one of the fastest amortizing pieces of equipment money can buy —paying for itself in short order.

Again the question: How many beaters do you think the one shown above replaced? Another: What else do you want to know about Dilts hydrapulpers?

DILTS MACHINE WORKS, Fulton, New York

Shartle Bros. Machine Co., Middletown, Ohio
Divisions of Black-Clawson Co., Hamilton, Ohio

HELP WANTED

"The Research Department of a large fibre container manufacturer has an opening for a chemist or chemical engineer, preferably with paper or paperboard mill experience. Work includes assistance in the development, manufacture, and quality control of paper packages. Midwest location. State education, experience, references, draft status, and salary expectations. Address Box 45-63, care Paper Trade Journal." F-22

WANTED—Machine Tender. High speed four-drinier machine manufacturing Kraft paper. Prefer man with high school or better education—25 or 35 years of age. Any applicants regarding this position must comply with WMC regulations. Address Box 45-36 care Paper Trade Journal. TF

DESIGNING engineers, draftsmen, resident engineer, general industrial pulp and paper experience, desired by well established firm of consulting engineers. Address Box 45-51 care Paper Trade Journal. F-15

MACHINE ADJUSTERS on paper bag specialties. Modern plant in Philadelphia. All new equipment. Ideal working conditions. Give full details of experience in first letter. Address Box 45-54 care Paper Trade Journal. F-1

MASTER MECHANIC—Excellent opportunity for qualified man to take charge of maintenance in large folding paper box plant. Address Box 45-66 care Paper Trade Journal. F-15

SITUATIONS WANTED

PRODUCTION MAN—Thoroughly experienced in production and supervision all varieties fine cardboards. Successful record personnel relations. Address Box 45-4 care Paper Trade Journal. F-22

PRACTICAL MANAGER or Superintendent—25 years experience on Book, Bond, Writing, Litho, Offset, Kraft, Board and ground wood specialties. Wishes to make change. Take complete charge of mill. Go anywhere. Address Box 45-34 care Paper Trade Journal. F-8

WANTED—Position as Plant Engineer in large mill or group. Technical education, 25 years experience, proven ability in design, construction and maintenance of mechanical, electrical and power equipment in board mills and box shops. Successful in managing labor, best of references. Now employed. Address Box 45-40 care Paper Trade Journal. F-8

AVAILABLE — GLASSINE AND GREASE-PROOF SUPERINTENDENT. Twenty-eight years of practical and successful experience. References. Age 46. Married. Address Box 45-35 care Paper Trade Journal. F-8

MANAGER or SALESMANAGER: Converting plant. Experienced in both paper and board conversion. Now employed in like work. Present salary $8400. Address Box 45-52 care Paper Trade Journal. F-8

SULPHITE SUPERINTENDENT or ASSISTANT available soon. Chemical Engineering Graduate. Address Box 45-50 care Paper Trade Journal. F-8

BEATER ROOM FOREMAN—Fine papers. Expert on colors. Eleven years assistant superintendent prominent rag bond mill. Understands his work thoroughly. Superintendent timber. Expects good salary. Available immediately. Address Box 45-55 care Paper Trade Journal. F-8

SUPERINTENDENT or assistant superintendent. Rag bonds and ledgers. Outstanding ability both machines and beaters. Expert on colors. Many years with leading manufacturer. Excellent references. Address Box 45-56 care Paper Trade Journal. F-8

SUPERINTENDENT—25 years experience in Book, Bond and Specialty Mills, using Kraft Sulphite, Rag stock, De-inked stock, soda pulp, etc. 40 years of age. Conscientious, aggressive and capable of taking complete charge. Address Box 45-29 care Paper Trade Journal. F-1

PRACTICAL SUPERINTENDENT on high grade folding boards, sulphite and groundwood specialties, test liner, etc. Address Box 45-59 care Paper Trade Journal. F-15

FOR SALE

FOR SALE

FOR SALE

by JACK ROSS 17 Porter Avenue, Newark 8, N. J.

Waverly 3-5675

2—120" Hamblet Duplex Sheeters with slitting device and Hamblet Layboys. Will stock four piles. With two deck 12 roll backstands.
These machines are in excellent condition and are guaranteed for 60 days. Prints on request.
1—Pusey & Jones 6" x 8" open impeller Centrifugal Stock Pump. Belt driven.
2—Pusey & Jones 5" x 8" open impeller Centrifugal Stock Pumps. Belt driven.
4—14" x 20" Connersville Vacuum Pumps.
3—12" x 18" Connersville Vacuum Pumps.
These pumps are fully rebuilt.
5—New Fourdriniers, wires 75 mesh, 75" wide by 50 foot long. Now in original boxes.
1—Downingtown 2500 lb. iron tub cyclone beater. Beater roll 60" face, 72" diameter. This beater in excellent condition having been in operation less than two years. Prints on request.

F-1

SITUATIONS WANTED

MILL REPRESENTATIVE — Fine or coarse papers. Excellent background, long experience. Capable of complete charge sales office or opening new area. Preferably New York. Address Box 45-58 care Paper Trade Journal. F-8

FOR SALE

PAPER MILL EQUIPMENT FOR SALE

65" Hamblet Sheeter with 4 slitters—with or without 6-roll backstand.
110" Hamblet Sheeter with 3 slitters and 4-roll backstand.
45" White Automatic Power Cutter.
68" Rice Barton & Fales Slitter & Rewinder, for use on dry end of paper machine.
63" Oswego Mill Type Cutter.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18, N. Y.
TF

FOR SALE

Guaranteed used steel pipe and boiler tubes
Wood and steel tanks
Buildings, valves and fittings

JOS. GREENSPON'S SON PIPE CORP.
Natl. Stock Yards, St. Clair Co., Ill. M-8

FOR SALE—1-120" Hamblet heavy duplex cutter with layboy and 12 roll backstand; Frank H. Davis Co., 175 Richdale Ave., Cambridge, 40, Mass. F-1

FOR SALE—Sixty (60) Dryers consisting principally of 86" and 90" face, a few 84" and 85" face, complete with triple deck stands, gears, bearings and piping. Empire Buz Corporation, Garfield, New Jersey. F-15

FOR SALE—1 Hamilton-Corliss Variable Speed Twin Engine, size of cylinders 12" x 24". Also Triple-Deck Frames for ninety 36" dryers, any width. The Chesapeake Paperboard Co., Baltimore, 30, Md. TF

FOR SALE—1-120" Hamblet heavy duplex cutter with layboy and 12 roll backstand. Frank H. Davis Company, 175 Richdale Ave., Cambridge, 40, Mass. F-1

FOR SALE—64" Seybold Twentieth Century Cutter, guaranteed to be in good working order. Address Box 45-67 care Paper Trade Journal. F-1

FOR SALE

FOR SALE

Running Board and Specialty Mill.—20 ton capacity—located in East. Address Box 45-61 care Paper Trade Journal. F-1

FOR SALE—Former paper mill property. Paper manufacturing equipment removed. Fine brick buildings of approximately 50,000 sq. ft., sprinkled. Complete with all boiler and heating units. Railroad siding and 4,000 H.P. developed water power practically year round. Ideal for installation of special paper making machinery for new project. For further particulars address Box 45-69 care Paper Trade Journal. F-1

FOR SALE—Self Opening Bag Machines—now in operation. Address Box 45-70 care Paper Trade Journal. F-8

FOR SALE—Unused clothing suitable for 48" and 76" Fourdrinier Paper Machines, includes wires, felts, aprons and jackets. Address Box 45-71 care Paper Trade Journal. F-15

WANTED

WANTED

One (1) Laboratory Beater
Waterbury Hydraulic Drive size 5
11—69" Diameter x 92" Face Dryers
16—48" Diameter x 92" Face Dryers
4—36" Diameter x 92" Face Dryers

with gears, frames, felt rolls and cone pulley drives. Address Box 44-708 care Paper Trade Journal. TF

WANTED TO PURCHASE—Paper mill in operation. Can pay all cash. Large successful mill preferred. Confidential. Address Box 44-770 care Paper Trade Journal. TF

WANTED

WANTED

One Beater of 1,000 lb. capacity.

One Jordan—No. 1 or No. 2 Miami or equivalent.

Two Calender Stacks — Approximately 100 inch face.

Give complete description, specifications and price.

Empire Box Corporation
Garfield, New Jersey
TF

WANTED

CALENDER STOCK—10" INTERMEDIATE ROLL MINIMUM
ALSO
SHEETER—SINGLE OR DOUBLE CUT-OFF BOTH FOR 72" MACHINE

Address Box 44-728 care Paper Trade Journal. TF

WANTED — DISCARDED PAPER MILL FELTS. HIGHEST PRICES paid for all kinds of discarded paper mill felts. LARGE or SMALL QUANTITIES accepted. Prices quoted immediately on receipt of samples. ADDRESS GLASER AND YOFFE, INC., 80 NORTH MAIN ST., NATICK, MASS. TF

WANTED—Brightwood Box Machine. Address Box 44-836 care Paper Trade Journal. tf

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic Presses, Sheridan Presses, Dryers. Address Box 44-835 care Paper Trade Journal. tf

WANTED—Any Item of Paper Tube and Paper Can Machinery, Slitters, Tube Winders, Cutters, etc. etc. We will buy such machinery in any condition. Theo. Adams, 111 W. Washington St., Chicago, 2, Ill. TF

FOR SALE

FOR SALE

FOR SALE

One complete 98" Fourdrinier and auxiliaries, specifications as follows:—

1—Moore & White Co. 98" Fourdrinier Paper Machine (Wire 70' Long x 98" Wide).
2—Sets of Presses.
1—18" Diameter Suction Couch Roll (Sandusky).
1—150 H.P. General Electric Co. motor and starter, driving the wet end of this machine.
28—Dryers—48" Diameter x 98" Face (2 deck).
1—Baby Dryer—30" Diameter x 98" Face.
1—Bottom Felt Dryer—36" Diameter x 96" Face.
1—Top Felt Dryer—36" Diameter x 96" Face.
1—4-Roll Calender Stack.
1—2-Reel Reel.
1—3-Drum Moore & White Co. Slitter and Winder.
7—1000 lb. Beaters (Noble and Wood Machine Co.).
1—200 H.P. motor and starter (3 phase, 60 cycles, 440 volts), driving line shaft for these beaters.
1—Motor driven Mammoth, Jr. Jordan (Noble and Wood Machine Co.).
2—10-plate Sandy Hill Flat Screens (Packer type), Witham Fasteners.
3—Sets of spare screen plates for the above Flat Screens.
1—Ames Twin Variable Speed Engine, from 50 to 200 H.P.
1—New bottom dryer felt—72 yards long x 98" wide.
1—New top dryer felt—78 yards long x 96" wide.
7—New Wet End felts—45' long x 100" wide.
1—New Fourdrinier Wire—70' long x 98" wide (80 mesh).

In addition to the above, we have available all the line shafting, piping, spare rolls, drives, stock chests, agitators, etc.
The above described machine is in excellent condition, having been in operation approximately three years on experimental work—presently on original foundations and can be seen in actual operation. Photos on request.

J. J. ROSS COMPANY, 250 Frelinghuysen Avenue, Newark 5, N. J.
Telephone Bigelow 3-3720 F-1

WANTED

WANTED

Complete—small paper mill. Trim 40 to 72". Write fully what you may have to offer.

Address Box 45-60 care Paper Trade Journal. F-8

WANTED—48" to 56" seven roll supercalender with cotton rolls; 48" to 52" sheet cutter; 40-50 Ream Cutter. Address Box 45-42 care Paper Trade Journal. F-1

WANTED—Used tensile testing machine with elongation scale. Capacity 1000 grams. Motor drive preferred. State make, details and price. Address Box 45-47 care Paper Trade Journal. F-1

WANTED — Three CARRIER DELIVERY units larger sizes preferred such as used on grocery bag machines. Address Box 45-65 care Paper Trade Journal. F-8

WANTED—Embossing Calender. Slitter Rewinder. Both heavy duty—50" wide or wider. Address Box 45-17 care Paper Trade Journal. F-1

BLANKETS

Converted From Your Used Felts

Write for Full Details

BLOOMFIELD WOOLEN COMPANY
BLOOMFIELD, IND.

WANTED

WANTED TO BUY — One Yankee Dryer, approximately 84" in width, from 84 to 120" in diameter. Address Box 45-64 care Paper Trade Journal. F-22

WANTED—Second-hand Cameron Rewinder that will take a roll sixty to seventy inches in width. Address Fort Howard Paper Company, Green Bay, Wis. F-1

TECHNICAL BOOKS AVAILABLE

BIBLIOGRAPHY OF PAPERMAKING, Vol. 1 1900-1928 — $10.00

PAPER MAKING MATERIALS (Reading List) By Clarence J. West, Ph.D. — $5.00

LOCKWOOD TRADE JOURNAL CO., Inc.
15 W. 47th St., N. Y. C.

Appleton Wires are Good wires
APPLETON WIRE WORKS, INC. APPLETON, WIS.

The right man may be seeking a job in an advertisement in this section.

The machine or the material you urgently need may be advertised right here in these columns.

Read Them, Use Them—If you need something, advertise for it—If you have something to sell tell the industry about it—Everybody reads the Clearing House.

WHERE TO BUY

ABRASIVES
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Monsanto Chemical Co.
Norton Co.

ADHESIVES
Arabol Mfg. Co.
National Adhesives Division of National Starch Products, Inc.
Philadelphia Quartz Co.
Stein, Hall & Co., Inc.
United States Rubber Co.

AGITATORS
Appleton Machine Co.
Dilts Machine Works, Inc.
Deer Company
Downingtown Mfg. Co.
Improved Paper Machy. Corp.
E. D. Jones & Sons Co.
D. J. Murray Mfg. Co.
Montague Machine Co.
Moore & White Co.
Noble & Wood Machine Co.
H. K. Porter Company Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

BAG MACHINES
Thomas W. Hall Co., Inc.
Pusdevin Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Weber, Herman G.

BARKERS AND CHIPPERS
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works, Inc.
E. D. Jones & Sons Co.
The Moore & White Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Simonds Worden White Co.
Valley Iron Works Co.

BEARINGS
Black-Clawson Company
Jones, E. D. & Sons Co.
The Manhattan Rubber Mfg. Co.
Montague Machine Works
Rollway Bearing Co.
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
SKF Industries Inc.
Timken Roller Bearing Co.
Valley Iron Works Co.
T. B. Woods' Sons Company

BEATERS & JORDANS
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Herman Mfg. Co.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
J. J. Ross Company
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works

BED PLATES
Bahr Brothers Mfg. Co.
Dilts Machine Works Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Simonds Worden White Co.
Valley Iron Works Co.

BELTING
Allis-Chalmers Mfg. Co.
The Cincinnati Rubber Mfg. Co.
The Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
J. E. Rhoads & Sons
United States Rubber Co.
T. B. Wood's Sons Company
Worthington Pump & Machinery Corp.

BLEACHING APPARATUS
Improved Paper Machy. Corp.
E. D. Jones & Sons Co.
Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
Noble & Wood Machine Co.
Pennsylvania Salt Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Montague Machine Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company
Valley Iron Works Co.

BOTTOMS
Harrington & King Perforating Co.
Kalamazoo Tank & Silo Co.

CALENDERS
Black-Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Lobdell Car Wheel Co.
Moore & White Co.
Perkins & Son, Inc., B. F.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works
Waldron Corp., John

CASTINGS
Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Fort Pitt Steel Casting Co., Div. H. K. Porter Company, Inc.
The Frederick Iron & Steel Co.
Grinnel Company
Hamblet Machine Co.
E. D. Jones & Sons Co.
Lobdell Car Wheel Co.
Montague Machine Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
Smith & Winchester Mfg. Co.
Traylor Engineering & Mfg. Co.
Union Machine Company
Union Screen Plate Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY
Bird Machine Co.
De Laval Steam Turbine Co.
Nichols Engrg. & Research Corp.
Ross J. O. Eng. Co.
Shartle Brothers Machine Co.

CHEMICALS
Alkivin Corporation
Amer. Cyanamid & Chem. Corp.
Ansul Chemical Co.
Calco Chemical Co.
Diamond Alkali o.
Dispersion Process Inc.
Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Geigy Co., Inc.
Gottesman & Co.
Hooker Electrochemical Company
The Mathieson Alkali Works, Inc.
Monsanto Chemical Company
The Neville Company
National Oil Products Co.
Naugatuck Chemical Div. of U. S. Rubber Co.
Niagara Alkali Company
Paper Makers Chemical Department, Hercules Powder Co.
Pennsylvania Salt Mfg. Co.
Pioneer Salt Company
Pittsburgh Plate Glass Co., Columbia Chemical Division
Solvay Sales Corp.
Stauffer Chemical Company
United States Rubber Co.
Witco Chemical Co.
Wyandotte Chemicals Corp.

CLEANING MATERIALS
Amer. Cyanamid & Chem. Corp.
Bird Machine Co.
E. I. du Pont de Nemours & Co., Inc.
Oakite Products, Inc.
Paper Makers Chemical Department, Hercules Powder Co.
Magnus Chemical Co.
Nichols Engrg. & Research Corp.
Pennsylvania Salt Mfg. Co.
Philadelphia Quartz Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Solvay Sales Corp.
Wyandotte Chemicals Corp.
J. B. Ford Division

CLUTCHES
Appleton Machine Co.
Black-Clawson Company
Hudson Sharp Machine Company
Farrel-Birmingham Co.
Fawick Airflex Co., Inc.
Horton Manufacturing Co.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Stearns Magnetic Mfg. Co.
Valley Iron Works Co.
T. B. Wood's Sons Company

COATING MACHINERY
Hudson Sharp Machine Company
Moore & White Co.
Pusdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corporation, John
Weber, Herman G.

COMPRESSORS
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
Ingersoll-Rand Co.
Nash Engineering Co.
Worthington Pump & Machinery Corp.

CONSULTING ENGINEERS
W. H. L. D. Betz
Frederic C. Clark
W. R. Cliffe
Ferguson, Hardy S.
Hardy, George F.
Johnson & Wierk, Inc.
The Kohler System Company
L. I. M. E.
Merritt-Chapman & Scott Corp.
Main, Inc., Chas. T.
J. E. Sirrine & Co.
Stone & Webster Engrg. Corp.

CONVEYORS
Black-Clawson Company
Murray, D. J. Mfg. Co.
Ross Engineering Corp., J. O.

CORES
Elixman Paper Co.
Sonoco Products Co.
Rodney Hunt Machine Co.
Montague Machine Co.
Smith & Winchester Mfg. Co.
Walker-Goulard-Plehn Co.

COUPLINGS
Black-Clawson Company
De Laval Steam Turbine Co.
Farrel-Birmingham Co., Inc.
The Frederick Iron & Steel
E. D. Jones & Sons Co.
Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John
Westinghouse Electric Mfg. Co.
T. B. Wood's Sons Company

CUTTERS
Thomas W. Hall Co.
Noble & Wood Mach. Co.
Perkins & Son, Inc., B. F.
The Smith & Winchester Mfg. Co.
Taylor Stiles & Co.

DAMPENERS
Perkins & Son, Inc., B. F.
Valley Iron Works Co.

DE-INKING
Kinsley Chemical Co.

DIGESTERS
The Biggs Boiler Works Co.
H. K. Porter Company Inc.
Pusey & Jones Corp.

DOCTORS
Bird Machine Company
Black-Clawson Company
Downingtown Mfg. Co.
Lobdell Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
Black-Clawson Company
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Montague Machine Co.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Simonds Worden White Co.
Shartle Brothers
United States Rubber Co.
Westinghouse Electric & Manufacturing Company

DRIERS
Black-Clawson Company
Murray Mfg. Co., D. J.
J. J. Ross Company
Ross, J. O. Engineering Corp.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Traylor Engineering & Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Bird Machine Co.
Black-Clawson Company
Davis, Frank H., Co.
De Laval Steam Turbine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
General Electric Company
Horton Manufacturing Co.
Rodney Hunt Machine Co.
Montague Machine Co.
Moore & White Co.
Murray, D. J. Mfg. Co.
Noble & Wood Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
The Sandy Hill Iron & Brass Work
Shartle Brothers Machine Co.
T. B. Wood's Sons Co.
Valley Iron Works Co.
Westinghouse Electric & Manufacturing Company

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
E. D. Jones & Son Co.
Moore & White Co.
Noble & Wood Machine Co.
Norwood Engrg. Co.
D. J. Murray Mfg. Co.

DYESTUFFS
Calco Chemical Co.
Ciba Company
E. I. du Pont de Nemours & Co.
Geigy Co., The
General Dyestuff Corp.
National Aniline Division, Allied Chemical & Dye Corp.
Paper Makers Chemical Department, Hercules Powder Co.
C. K. Williams & Co.
Witco Chemical Co.

EVAPORATORS
Black-Clawson Company
Goslin-Birmingham Mfg. Co., Inc.
Murray, D. J., Mfg. Co.
Traylor Engineering & Mfg. Co.

FANS
General Electric Co.
B. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS
Merrick Scale Mfg. Co.
Leeds & Northrup
Traylor Engineering Co.
Wallace & Tiernan

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Bloomfield Woolen Co.
Bulkley, Dunton Pulp Co. Inc.
Draper Bros. Corp.
Pitchburg Duck Mills
Huyck & Son, F. C.
Lockport Felt Co.
Mt. Vernon-Woodbury Mills, Inc.
Morey Paper Mill Supply Co.
Orr Felt & Blanket Co.
Shuler & Benninghofen
Waterbury Felt Co.
Woodward, Baldwin & Co.

FELT GUIDES
Moore & White Co.
The Sandy Hill Iron & Brass Work
Shartle Brothers Machine Co.
Waldron Corp., John

FILLERS
American Colloid Co.
Amer. Cyanamid & Chem. Corp.
International Pulp Co.
W. H. Loomis Talc Corp.
Union Talc Co.
Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Moore & White Co.
J. O. Ross Engrg. Corp.
Worthington Pump & Mchy. Corp.
Witco Chemical Co.

FLOORING, GRATING & TREADS
Hendrick Mfg. Co.
Klemp, W. F., Co.
Norton Co.
Manhattan Rubber Mfg. Div. of Raybestos-Manhattan, Inc.
Robinson, C. P.
United States Rubber Co.

FORMING MACHINES
Downingtown Mfg. Co.
Noble & Wood Machine Co.
Oliver United Filters
The Sandy Hill Iron & Brass Work
Shartle Brothers Machine Co.

WHERE TO BUY

GEARS
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

GRINDERS
Covel-Hanchett Co.
Farrel-Birmingham Co.
Lobdell Car Wheel Co.
Montague Machine Co.
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Simonds Worden White Co.
United States Rubber Co.

HEATING, VENTILATING AND AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
E. D. Jones & Sons Co.
General Electric Co.
Grinnell Company
Leeds & Northrup
D. J. Murray Mfg. Co.
Noble & Wood Machine Co.
Ross Engineering Corp., J. O.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Worthington Pump & Mchy Corp.

HOISTS
Appleton Machine Co.
Dilts Machine Works
Rodney Hunt Machine Co.
Ingersoll-Rand Co.
E. D. Jones & Sons Co.

HOSE (Air, Water, Suction, etc.)
The Cincinnati Rubber Mfg. Co.
The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan Inc.
United States Rubber Co.

INSTRUMENTS, TESTING AND MEASURING
W. H. & L. D. Betz
N. P. Bewsher
The Foxboro Company
General Electric
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Taylor Instrument Cos.
Wallace & Tiernan Co., Inc.
Westinghouse Electric & Manufacturing Company
Wilkens-Anderson Co.

JORDAN FILLINGS
Appleton Machine Co.
Behr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Noble & Wood Machine Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
E. D. Jones & Sons Co.
Simonds Worden White Co.
Valley Iron Works Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
W. H. & L. D. Betz
Dilts Machine Works
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Taber Instrument Co.
Taylor Instrument Companies
Valley Iron Works Co.

LAY BOYS
Hamblet Machine Co.
Moore & White Co.
Shartle Brothers

LUBRICANTS
Gulf Oil Corporation
Gulf Refining Co.
Sinclair Refining Co.
Socony-Vacuum Oil Co., Inc.
Sun Oil Company
Tide Water Associated Oil Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Car Wheel Co.
Walker-Goulard-Plaha Co

MIXERS
Youngstown Welding & Engrg. Co.

MOISTENING EQUIPMENT
The Spray Engineering Co.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Co.
Ingersoll-Rand Co.
Reliance Electric & Engrg. Co.
Westinghouse Electric & Manufacturing Company

PACKING BOXES
Johnson Corporation
Shartle Brothers Machine Co.

PACKING
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United States Rubber Co.

PAPER MACHINES
Black-Clawson Company
Downingtown Mfg. Co.
Thomas W. Hall Co.
Moore & White Co.
Pusey & Jones
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
Montague Machine Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Thomas W. Hall Co.
Hudson Sharp Machine Company
Langston Co., Samuel M.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PERFORATED METAL
Allis-Chalmers Mfg. Co.
Harrington & King Perforating Co.
Hendrick Mfg. Co.

PIPE
Black-Clawson Company
Crane Company
Grinnell Company
Shartle Brothers Machine Co.
Taylor Forge & Pipe Works
Walworth Company
Youngstown Welding & Engrg. Co.

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The Norwood Engineering Company
Perkins & Son, Inc., B. F.

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Black-Clawson Company
Hendrick Mfg. Co.
Kemp, W. F., Co.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Timken Roller Bearing Co.

PLUGS
Black-Clawson Company
E. D. Jones & Sons Co.
The Noble & Wood Machine Co.
The Richardson Economy Plug Co.
Shartle Brothers Machine Co.

PRESSES
Black-Clawson Company
Farrel-Birmingham Co.
Dietz Machine Wks.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Rotogravure Engineering Co.
Shartle Brothers
Valley Iron Works Co.
Waldron Corp., John
Weber, Homer G.

PUG MILLS
Traylor Engineering & Mfg. Co.

PULPS
Anderson Co., J.
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.

PUMPS
Allis-Chalmers Mfg. Co.
Black-Clawson Company
Dorr Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Frederick Iron and Steel Co.
Ingersoll-Rand Co.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Noble & Wood Machine Co.
Paper Converting Mch. Co.
Quimby Pump Co. Div. of H. K. Porter Company, Inc.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company
Worthington Pump & Machinery Corp.

RECOVERY SYSTEMS
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones
Ross Engineering Corp. J. O.
Valley Iron Works Co.

RECTANGULAR BINS
Traylor Engineering & Mfg. Co.

REELS
Black-Clawson Company
Downingtown Mfg. Co.
De Laval Steam Turbine Co.
Hudson Sharp Machine Company
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
Rotogravure Engrg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS
Appleton Machine Co.
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Bauer Brothers Co.
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The Hermann Manufacturing Co.
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Murray, D. J. Mfg. Co.
Noble & Wood Machine Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout, Waldron & Co.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Brown Instrument Co.
The Foxboro Company
Jones, E. D., & Sons Co.
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
National Technical Laboratories
Noble & Wood Machine Co.
Shartle Brothers
Taylor Instrument Companies
Wallace & Tiernan
Westinghouse Electric & Manufacturing Company

RESINS
American Cyanamid & Chemical Corp.
The Neville Company
The Resinous Products & Chemical Co.

ROLLS
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Improved Paper Machy. Corp.
Lobdell Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
Montague Machine Co.
D. J. Murray Mfg., Co.
Noble & Wood Machine Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
Roehlen Engraving Co.
J. J. Ross Company
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Shenango-Penn Mold Co.
Sinclair Co.
Smith & Winchester Mfg. Co.
Stearns Magnetic Mfg. Co.
United States Rubber Co.
Valley Iron Works Co.
Waldron Corp., John

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Youngstown Welding & Engrg. Co.

ROLL STANDS
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Johnstone Eng. & Machine Co.
The Kohler System Company
Moore & White Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.

ROTARY KILNS
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Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman C.

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Appleton Machine Co.
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Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

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Carthage Machine Co.

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Pioneer Salt Company
Socony-Vacuum Co.
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Hudson Sharp Machine Company
Johnstone Eng. & Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Simonds Worden White Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SPRAY NOZZLES
The Spray Engineering Co.

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American Cyanamid & Chemical Corp.
Clinton Co.
National Starch Products, Inc.
Stein, Hall & Co., Inc.

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Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

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The Stanley Works

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Moore & White Co.
D. J. Murray Mfg. Co.
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The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

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Black-Clawson Company
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Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Westinghouse Electric & Manufacturing Company.

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Stauffer Chemical Company
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

TALC
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W. H. Loomis Talc Corp.
International Talc Company

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Kalamazoo Tank & Silo Co.
The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc.
The Noble & Wood Machine Co.
H. K. Porter Company Inc.
Rodney Hunt

J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Traylor Engineering & Mfg. Co.
United States Rubber Co.
Waldron Corp., John
Youngstown Welding & Engrg. Co.

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Bulkley, Dunton Pulp Co. Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Montague Machine Co.
Moore & White Co.
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J. J. Ross Company
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

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Shartle Brothers
Valley Iron Works Co.

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Hunt, Rodney, Mach. Co.
Westinghouse Electric & Manufacturing Company
Worthington Pump & Machinery Corp.

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Shartle Brothers Machine Co.

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Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

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Potdevin Machine Co.
Rotogravure Engrg. Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

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Walworth Company
Westinghouse Electric & Manufacturing Company

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Carthage Machine Co.
Downingtown Mfg. Co.
Moore & White Co.
Montague Machine Co.
Noble & Wood Machine Co.
Pusey & Jones Corp.
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The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

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Langston Co., Samuel M.
Johnstone Eng. & Machine Co.
The Kohler System Company
Montague Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
Rotogravure Engrg. Co.
J. J. Ross Company
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

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Appleton Wire Works
Black-Clawson Company
Bulkley, Dunton Pulp Co. Inc.
Cheney Bigelow Wire Works
Hayden Wire Works
International Wire Works
Lindsay Wire Weaving Co.
Shartle Brothers Machine Co.

ALPHABETICAL INDEX TO ADVERTISERS

Aktivin Corporation — —
Allis-Chalmers Mfg. Co. — 3
American Colloid Company — —
American Cyanamid & Chemical Corp. — —
American Resinous Chemical Corp. — —
Ames, B. C., Company — —
Andersen & Co., J. — —
Appleton Machine Co. — —
Appleton Wire Works, Inc. — 49
Appleton Woolen Mills — 45
Arabol Manufacturing Co. — —
Armstrong Machine Works — —
Asten Hill Mfg. Co. — Front Cover
Automatic Transportation Co. — 4

Bagley & Sewall Company — —
Bahr Brothers Mfg. Co. — 43
Bauer Brothers Co. — —
Bausch & Lomb Optical Co. — —
Betz, W. H. & L. D. — —
Binney & Smith Co. — —
Bird Machine Company — —
Black-Clawson Co. — 47
Bloomfield Woolen Co. — 49
Boston & Maine Railroad — —
Bowsher Company, N. P. — —
Bridgeport Safety Emery Wheel Co. — —
Bristol Company, The — —
Bulkley Dunton Pulp Co. — —

Calco Chemical Co., Inc. — —
Cambridge Instrument Co. — —
Cameron Machine Co. — 41
Carthage Machine Co. — —
Cheney Bieglow Wire Works — —
Cincinnati Rubber Mfg. Co. — —
Clark, Frederic C. — —
Classified Advertising — 46
Clinton Company — —
Columbian Carbon Co. — —
Cooper Alloy Foundry Co. — —
Corn Products Refining Co. — —
Corning Glass Works — —
Covel-Hanchett Co. — —
Crane Company — —

De Laval Steam Turbine Co. — 45
Diamond Alkali Company — —
Dietz Machine Works — —
Dilts Machine Works — 47
Dorr Company — —
Dow Chemical Co. — 11
Downingtown Mfg. Co. — 2
Draper Bros. Company — —
Du Pont de Nemours & Co., Grasselli Chem. Div. — —
Du Pont de Nemours & Co., Inc., du Pont Pigments Dept. — —

Elixman Paper Core Co. — —
English China Clays Sales Corp. — —

Farrell-Birmingham Co. — —
Fawick Airflex Inc. — —
Ferguson, Hardy S. & Co. — 45
Foster Wheeler Corp. — —
Foxboro Company — —
Frederick Iron & Steel Co. — —

Geigy Company, Inc. — —
General Chemical Co. — —
General Dyestuff Corp. — —
General Electric Co. — —
Goodrich Company, B. F. — —
Goslin-Birmingham Mfg. Co., Inc. — —
Gottesman & Co. — —
Graton & Knight Co. — —
Grinnell Company, Inc. — —
Gulf Oil Corporation — —
Gurley, W. & L. E. — —

Hall, Thomas W., Company — 48
Hamblet Machine Company — —
Hardy, George F. — 45
Harrington & King Perforating Co. — 43
Hayden Wire Works — —
Hendrick Mfg. Co. — 45
Heppenstall Company — —
Hercules Powder Company — —
Hermann Mfg. Co. — —
Hooker Electrochemical Co. — —
Horton Manufacturing Co. — —
Hubbs Houses — —
Hudson Sharp Machine Co. — —
Hunt Machine Co., Rodney — —
Huyck & Son, F. C. — —

Industrial Plants Corp. — 24
Ingersoll Rand Co. — —
International Nickel Co. — 53
International Talc Co. — —
International Wire Works — —

Jenssen Co., G. D. — —
Johnson & Wierk — —
Johnson Corporation — —
Johnstone Engrg. & Mch. Co. — —
Jones, E. D. & Sons Co. — —

Kalamazoo Tank & Silo Co. — 25
Kennedy Valve Mfg. Co., The — —
Kinsley Chemical Co. — 45
Klemp, W. F. Company — —
Kohler System Co. — —

Langston Co., Samuel M. — 43
L. I. M. E. — 45
Lindsay Wire Weaving Co. — 41
Lobdell Company — —
Lodding Engineering Co. — —
Loomis, W. H., Talc Corp. — —
Lyddon & Company — —

Magnetic Pigment Division, Columbia Carbon Co. — —
Magnus Chemical Co. — —
Main, Inc., Chas. T. — 45
Manhattan Rubber Mfg. Div. of Raybestos Manhattan, Inc. — —
Mathieson Alkali Works — —
Meisel Press Mfg. Co. — 5
Merrick Scale Mfg. Co. — —
Merritt-Chapman & Scott Co. — 45
Michigan Steel Casting Co. — 43
Monsanto Chemical Co. — —
Moore & White Company — 45
Murray Mfg. Co., D. J. — —

Nash Engineering Co. — —
National Aniline Division, Allied Chemical & Dye Corp. — —
National Adhesives — —
National Oil Products Co. — —
National Technical Laboratories — —
Niagara Alkali Company — 19
Noble & Wood Mach. Co. — —
Norton Company — —

Oakite Products, Inc. — —
Oliver-United Filters Co. — 9
Orr Felt & Blanket Co. — —

Paper Converting Mch. Co. — —
Parsons & Whittemore, Inc. — —
Pennotex Oil Corp. — —
Pennsylvania Salt Mfg. Co. — —
Perkins-Goodwin Co. — —
Perkins & Sons, Inc., B. F. — —
Philadelphia Quartz Co. — —
Pioneer Salt Co. — —
Pittsburgh Plate Glass Co., Columbia Chemical Division — —
Porter, H. K., Company, Inc. — —
Potdevin Machine Co. — 43
Powell, Wm., Company — —
Price & Pierce, Ltd. — 43
Pusey & Jones Corp. — 6

Quimby Pump Co., Division of H. K. Porter Co., Inc. — —

Railway Supply & Mfg. Co. — —
Reading Chain & Block Corp. — —
Record Fdy. & Mch. Co. — —
Reichhold Chemical, Inc. — —
Reliance Elec. & Engrg. Co. — —
Research Corp. — —
Resinous Products & Chem. Co. — 13
Roehlen Engraving Works, Inc. — —
Rogers & Company, S. C. — —
Rollway Bearing Co. — —
Ross Jack — 48
Ross, J. J., Company — 46 & 49
Rotogravure Engrg. Co. — —

Sandy Hill Iron & Brass Works — —
Seaboard Air Line Ry. — —
Shartle Bros. Machine Co. — 47
Shenango-Penn Mold Co. — —
Shuler & Benninghoffen — —
Simonds Worden White Co. — —
Sinclair Refining Company — —
Sirrine, J. E. & Company — —
SKF Industries, Inc. — 28
Smith & Winchester Mfg. Co. — 43
Socony-Vacuum Oil Co., Inc. — —
Solvay Sales Corp. — —
Sonoco Products Co. — —
Spray Engineering Company — —
Sprout, Waldron & Co. — 45
Stanley Works, The — 39
Stauffer Chemical Co. — 41
Stone & Webster Engrg. Corp. — —
Stickle-Steam Specialties Co. — —
Sun Oil Company — —
Sutherland Refiner Corp. — —

Taylor Forge & Pipe Works — —
Taylor Instrument Co. — —
Taylor Stiles & Co. — —
Texas Company, The — —
Texas Gulf Sulphur Co. — —
Tidewater Assoc. Oil Co. — 45
Timken Roller Bearing Co. — Back Cover
Titanium Pigment Corp. — —
Traylor Engrg. & Mch. Co. — 39
Trinity Bag & Paper Co. — —
Tucker & Co., Inc. — —

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United Carbon Co. — —
U. S. Rubber Co. — —

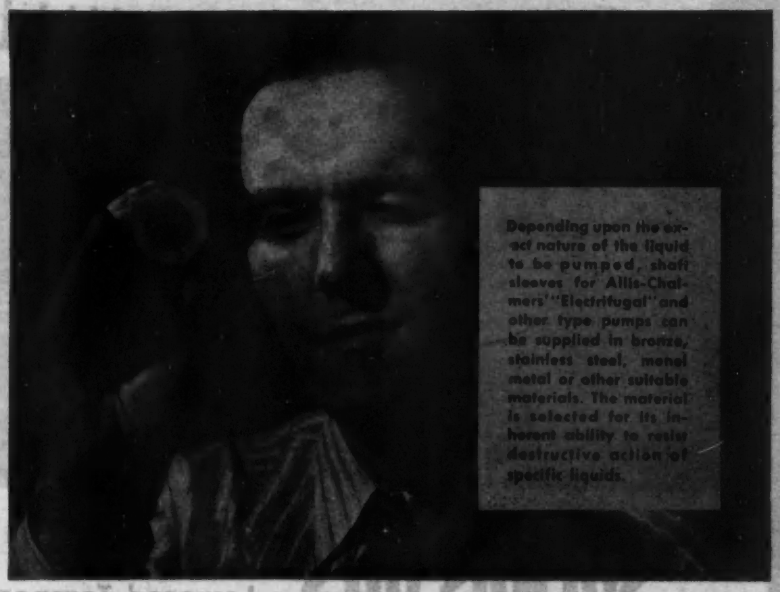
Valley Iron Works — —
Vanderbilt Co., R. T. — —

Waldron Corp., John — —
Walker-Goulard-Plehn Co. — —
Wallace & Tiernan Co., Inc. — —
Wallerstein Company — 43
Walworth Company — —
Warren Steam Pump Co. — —
Waterbury Felt Co. — —
Weber, H. C. & Company — —
Westinghouse Elect. & Mfg. Co. — —
West Virginia Pulp & Paper Co. — 41
Witco Chemical Company — —
Woodward Baldwin & Co. — —
Wright-Hibbard Ind. Elect. Truck Co. — —
Wyandotte Chemicals Corp. — 15

Youngstown Welding & Engrg. Co. — —

[PUMP TIPS FROM ALLIS-CHALMERS—ONE IN A SERIES]

How to make SLEEVES Last Longer...



Depending upon the exact nature of the liquid to be pumped, shaft sleeves for Allis-Chalmers' "Electrifugal" and other type pumps can be supplied in bronze, stainless steel, monel metal or other suitable materials. The material is selected for its inherent ability to resist destructive action of specific liquids.

AS WITH MANY pump troubles, excessive sleeve wear is apt to trace back to misalignment of pump and motor. For when shaft is deflected, sleeve is apt to wobble within the packing — accelerating friction and wear.

So serious is this problem of misalignment, that Allis-Chalmers engineers were led to develop, for many applications, the famous "Electrifugal" pump — in which both the motor and pump impeller are mounted on one shaft and in one frame.

In such a pump the elements cannot get out of line — and danger of excessive sleeve wear is minimized. However, many pumps in use today are separate from their driving motors — and the coupling flanges must be carefully aligned . . . and *kept* in alignment!

Here are other ways to extend sleeve life:

▶ Don't draw stuffing box gland too tightly . . . excessive pressure will wear shaft sleeves unduly.

▶ Never pump a liquid for which your pump was not designed. Sleeves are able to withstand corrosive effects of some but not necessarily all liquids. When in doubt over safety of changing pump application, check with your manufacturer.

▶ Generally a thin stream of liquid being pumped serves as a water seal between packing and sleeve. If it is dirty or abrasive, a separate supply of sealing liquid should be obtained. And it should reach the sleeve in a steady supply. Be careful water seal piping isn't plugged — or lantern ring displaced.

▶ Send for your *free* copy of Allis-Chalmers' "Handbook for Wartime Care of Centrifugal pumps". This valuable booklet applies to *all* makes of pumps. ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, WIS.

Tune in the Boston Symphony, Blue Network, every Sat. Eve.

A 1708

ALLIS-CHALMERS PUMPS

Allis-Chalmers builds all types and variations of pumps shown at right. Capacities from 10 to 150,000 gpm—heads to 2500 lbs.

SOLNUS OILS...Lowered Temperature of 1200-Pound Roll Bearings, Eliminated Semi-Yearly Oil Change in Paper Mill

A prominent manufacturer of fine papers ran into trouble in lubricating two super calenders. Bearings on the 14 rolls were 15" in diameter, revolving in bronze bushings. A well-known make of oil was being used in the circulating system, but the bearings were running hot. The oil sludged and had to be changed twice a year. Finally, when one bearing caught fire, the management called a Sun Oil engineer for his recommendation.

Forty gallons of oil were drained from the system and replaced with the proper grade of Solnus Oil. The machines were put back in operation, and bearings stayed at a normal operating temperature.

After two years, the management reported the Solnus Oil did not sludge.

Continuous operation of this sort is only one of the results of good lubrication. Paper mills in many parts of the country are utilizing the experience of Sun engineers and the quality of Sun lubricants to maintain peak operating levels, to cut down maintenance costs, and to eliminate chronic trouble spots. Sun makes a complete line of quality oils and greases for every type of paper machinery, and for all other industrial equipment. Call in a Sun engineer for a scientific study of your oil needs.

SUN OIL COMPANY · ***Philadelphia 3, Pa.***

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